

Owner's Manual & Safety Instructions

Save This Manual Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

CENTRALPNEUMATIC®

9GAL wheelbarrow oil lubricated air compressor



⚠ DANGER

Using an engine indoors
CAN KILL YOU IN MINUTES.

Engine exhaust contains carbon monoxide.
This is a poison you cannot see or smell.



NEVER use inside
a home or garage,
EVEN IF doors and
windows are open.



Only use OUTSIDE
and far away from
windows, doors,
and vents.

Visit our website at: <http://www.harborfreight.com>
Email our technical support at: tech@harborfreight.com
or engine technical support at: predator@harborfreight.com

ITEM 69783

When unpacking, make sure that the product is intact and undamaged.

If any engine parts are missing or broken,
please call 1-800-520-0882 (engine parts) or
1-800-444-3353 (other parts) as soon as possible.

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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools. Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein. Tools required for assembly and service may not be included.

⚠ WARNING

Read this material before using this product.
Failure to do so can result in serious injury.
SAVE THIS MANUAL.

STOP

IMPORTANT

STOP

DO NOT RETURN TO STORE

This unit was fully tested and inspected prior to shipment and will operate properly when instructions are followed. Refer to your owner's manual for basic troubleshooting. **To avoid unnecessary return to the store, simply call Compressor Support toll free for additional assistance.**



Compressor Support: 1-800-444-3353

Please have your model number and serial number available. These can be found on the data label on your product. Retain a copy of your receipt with purchase date for reference.

NOTICE

- Air Compressor will automatically shut off when maximum PSI is reached. When the tank pressure drops to the cut in pressure (low pressure) and the on/off switch is in the ON position, the unit will automatically restart.
- On occasion, maximum pressure in tank will remain until next use thus resulting in a sense of no power (See bullet above).
- To avoid power loss, overheating and ensure power, use additional air hose rather than extension cords.
- It is the consumer's responsibility to drain oil lubed units prior to shipment to meet ICC, state and local fire regulations.

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INTRODUCTION

This tool has many features for making its use more pleasant and enjoyable. Safety, performance, and dependability have been given top priority in the design of this product making it easy to maintain and operate.



DANGER

This compressor/pump is not equipped and should not be used to supply breathing quality air. Additional equipment would be necessary to properly filter and purify the air to meet minimal specifications for Grade D breathing as described in Compressed Gas Association Commodity Specification G 7.1 - 1966, OSHA 29 CFR 1910.134. Compressed Gas Association, 4221 Walney Road, Fifth Floor, Chantilly, VA 20151-2923, (703) 788-2700, www.cganet.com. Any such additional equipment has not been examined and no implication of proper use for breathing air is intended or implied.

If this compressor is altered in any way, existing warranties shall be voided. Harbor Freight Tools disclaims any liabilities whatsoever for any loss, personal injury, or damage.

GENERAL SAFETY RULES



WARNING:

Read and understand all instructions. Failure to follow all instructions listed below may result in electric shock, fire, and/or serious personal injury.



WARNING:

This instruction manual, and any instructions supplied by manufacturers of supporting equipment, should be read and understood prior to starting the compressor. Failure to comply with safety precautions and procedures outlined in this manual may void your warranty. Before contacting your distributor or the factory, check the maintenance requirements and the troubleshooting guide for your compressor. Most warranty issues can be taken care of by following proper maintenance procedures.

SAVE THESE INSTRUCTIONS

WORK AREA

- **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents. Floor must not be slippery from wax or dust.
- **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Power tools create sparks which may ignite the dust or fumes.
- **Keep bystanders, children, and visitors away while operating tools.** Distractions can cause you to lose control.
- **Operate air compressor in an open area at least 18 in. away from any wall or object that could restrict the flow of fresh air to ventilation openings.**

ELECTRICAL SAFETY

- **Avoid body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerators.** There is an increased risk of electric shock if your body is grounded.
- **Don't expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- **Do not abuse the cord. Never use the cord to carry the tool or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges, or moving parts. Replace damaged cords immediately.** Damaged cords increase the risk of electric shock.
- **When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W".** These cords are rated for outdoor use and reduce the risk of electric shock.

PERSONAL SAFETY

- **Eye protection which conforms to ANSI specifications and provides protection against flying particles both from the FRONT and SIDE should ALWAYS be worn by the operator and others in the work area when loading, operating, or servicing this tool.** Eye protection is required to guard against flying fasteners and debris, which could cause severe eye injury.
- **The employer and/or user must ensure that proper eye protection is worn.** We recommend a Wide Vision Safety Mask for use over eyeglasses or standard safety glasses that provide protection against flying particles both from the front and side. Always use eye protection which is marked to comply with ANSI Z87.1.
- **Additional safety protection will be required in some environments.** For example, the working area may include exposure to a noise level which can lead to hearing damage. The employer and user must ensure that any necessary hearing protection is provided and used by the operator and others in the work area. Some environments will require the use of head protection equipment. When required, the employer and user must ensure that head protection marked to comply with ANSI Z89.1 is used.
- **Stay alert, watch what you are doing, and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating power tools may result in serious personal injury.
- **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.
- **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the tool in unexpected situations.
- **Use safety equipment. Always wear eye protection.** Dust mask, nonskid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.
- **Do not use on a ladder or unstable support.** Stable footing on a solid surface enables better control of the tool in unexpected situations.

TOOL USE AND CARE

- **Do not exceed the pressure rating of any component in the system.**
- **Never use this compressor to inflate low pressure objects (i.e. toys, footballs, etc.).**
- **Protect material lines and air lines from damage or puncture.** Keep hose and power cord away from sharp objects, chemical spills, oil, solvents, and wet floors.
- **Check hoses for weak or worn condition before**

GENERAL SAFETY RULES

each use, making certain all connections are **secure**. Do not use if defect is found. Purchase a new hose or notify an authorized service center for examination or repair.

- **Release all pressures within the system slowly.** Dust and debris may be harmful.
- **Store idle tools out of the reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
- **Maintain tools with care.** Follow maintenance instructions. Properly maintained tools are easier to control.
- **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tool's operation. If damaged, have the tool serviced before using.** Many accidents are caused by poorly maintained tools.
- **Never point any tool toward yourself or others.**
- **Keep the exterior of the air compressor dry, clean, and free from oil and grease.** Always use a clean cloth when cleaning. Never use brake fluids, gasoline, petroleum-based products, or any strong solvents to clean the unit. Following this rule will reduce the risk of deterioration of the enclosure plastic.

SERVICE

- **Tool service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel may result in a risk of injury.
- **Disconnect power supply, open drain valve to decompress tank and allow water to drain, and allow air compressor to become cool to the touch before servicing.** Turn pressure regulator knob fully counter clockwise after shutting off compressor.
- **When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual.** Use of unauthorized parts or failure to follow Maintenance instructions may create a risk of injury.

GENERAL

- **Do not remove or paint over any DANGER!, WARNING!, CAUTION!, or instructional materials attached to the compressor.**
- **If for any reason any part of the manual becomes illegible or the manual is lost, have it replaced immediately.** The instruction manual should be read periodically to refresh one's memory.

SPECIFIC SAFETY RULES












- **Disconnect electrical compressor units from their power source or shut down gas engine powered compressor units & relieve the system of all pressure before servicing any part of the unit or attaching tools or accessories.**
- **Allow ample time for the compressor unit to cool before performing service procedures.** Some surface temperatures exceed 350°F when the compressor is operating.
- **Do not change the pressure setting of the safety valve, restrict the function of the safety valve, or replace the safety valve with a plug.**
- **Do not install a shutoff valve in the compressor discharge line without first installing a safety valve of proper size and design between the shutoff valve and the compressor.**
- **Periodically check all safety valves for proper operation.**

SPECIFIC SAFETY RULES

- **Know your power tool.** Read operator's manual carefully. Learn its applications and limitations, as well as the specific potential hazards related to this tool. Following this rule will reduce the risk of electric shock, fire, or serious injury.
- **Drain tank of moisture after each day's use.** If unit will not be used for a while, it is best to leave drain valve open until such time as it is to be used. This will allow moisture to completely drain out and help prevent corrosion on the inside of tank.
- **Risk of Fire or Explosion.** Do not spray flammable liquid in a confined area. Spray area must be well ventilated. Do not smoke while spraying or spray where spark or flame is present. Keep compressors as far from the spraying area as possible, at least 15 feet from the spraying area and all explosive vapors.
- **Risk of Bursting.** Do not adjust regulator to result in output pressure greater than marked maximum pressure of attachment. Do not use at pressure greater than the rated maximum pressure of this compressor.
- **If connected to a circuit protected by fuses,** use time-delay fuses with this product.
- **To reduce the risk of electric shock,** do not expose to rain. Store indoors.
- **Inspect tank yearly for rust, pin holes, or other imperfections that could cause it to become unsafe.** Never weld or drill holes in the air tank.
- **Make sure the hose is free of obstructions or snags.** Entangled or snarled hoses can cause loss of balance or footing and may become damaged.
- **Use the air compressor only for its intended use. Do not alter or modify the unit from the original design or function.**
- **Always be aware that misuse and improper handling of this tool can cause injury to yourself and others.**
- **Never leave a tool unattended with the air hose attached.**
- **Do not operate this tool if it does not contain a legible warning label.**
- **Do not continue to use a tool or hose that leaks air or does not function properly.**
- **Always disconnect the air supply and power supply before making adjustments, servicing a tool, or when a tool is not in use.**
- **Do not attempt to pull or carry the air compressor by the hose.**
- **Your tool may require more air consumption than this air compressor is capable of providing.**
- **Never use the compressor without guards (belt guard) and never touch moving parts.**
- **Always follow all safety rules recommended by the manufacturer of your tool, in addition to all safety rules for the air compressor.** Following this rule will reduce the risk of serious personal injury.
- **Never direct a jet of compressed air toward people or animals. Take care not to blow dust and dirt towards yourself or others.** Following this rule will reduce the risk of serious injury.
- **Protect your lungs.** Wear a face or dust mask if the operation is dusty. Following this rule will reduce the risk of serious personal injury.
- **Do not use this air compressor to spray chemicals.** Your lungs can be damaged by inhaling toxic fumes. A respirator may be necessary in dusty environments or when spraying paint. Do not carry while painting.
- **Inspect tool cords and hoses periodically and, if damaged, have repaired at your nearest Authorized Service Center. Constantly stay aware of cord location.** Following this rule will reduce the risk of electric shock or fire.
- **Never use an electrical adaptor with this grounded plug.**
- **Check damaged parts.** Before further use of the air compressor or air tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center. Following this rule will reduce the risk of shock, fire or serious injury.
- **Make sure your extension cord is in good condition.** When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. A wire gauge size (A.W.G.) of at least 14 is recommended for an extension cord 50 feet or less in length. A cord exceeding 100 feet is not recommended. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating.
- **Save these instructions.** Refer to them frequently and use them to instruct others who may use this air compressor. If you loan someone this tool, loan them these instructions also.




SYMBOLS

Some of the following symbols may be used on this tool. Please study them and learn their meaning. Proper interpretation of these symbols will allow you to operate the tool better and safer.

SYMBOL	NAME	DESIGNATION/EXPLANATION
V	Volts	Voltage
A	Amperes	Current
Hz	Hertz	Frequency (cycles per second)
~	Alternating Current	Type of current
	Class II Construction	Double-insulated construction
	Wet Conditions Alert	Do not expose to rain or use in damp locations.
	Read The Operator's Manual	To reduce the risk of injury, user must read and understand operator's manual before using this product.
	Eye Protection	Always wear safety goggles, safety glasses with side shields, or a full face shield when operating this product.
	Safety Alert	Precautions that involve your safety.
	Risk of Bursting	Do not adjust regulator to result in output pressure greater than marked maximum pressure of attachment. Do not use at pressure greater than the rated maximum pressure of this compressor.
	Risk of Fire or Explosion	Do not spray flammable liquid in a confined area. Spray area must be well ventilated. Do not smoke while spraying or spray where spark or flame is present. Keep compressors as far from the spraying area as possible, at least 15 feet from the spraying area and all explosive vapors.
	Risk of Electrical Shock	Hazardous Voltage: Disconnect from power source before servicing. Compressor must be grounded.
	Hot Surface	To reduce the risk of injury or damage, avoid contact with any hot surface.
	Risk to hearing	Always wear ear protection when using this tool. Failure to do so may result in hearing loss.
	Risk to Breathing	Air obtained directly from the air compressor should never be used to supply air for human consumption.

SYMBOLS

The following signal words and meanings are intended to explain the levels of risk associated with this product.

SYMBOL	SIGNAL	MEANING
	DANGER:	Indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.
	WARNING:	Indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.
	CAUTION:	Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury.
	CAUTION:	(Without Safety Alert Symbol) Indicates a situation that may result in property damage.

SERVICE

Servicing requires extreme care and knowledge and should be performed only by a qualified service technician. For service we suggest you return the product to the nearest **AUTHORIZED SERVICE CENTER** for repair. When servicing, use only identical replacement parts.



WARNING:

To avoid serious personal injury, do not attempt to use this product until you read thoroughly and understand completely the operator's manual. Save this operator's manual and review frequently for continuing safe operation and instructing others who may use this product.



WARNING:



The operation of any power tool can result in foreign objects being thrown into your eyes, which can result in severe eye damage. Before beginning power tool operation, always wear safety goggles, safety glasses with side shields, or a full face shield when needed. We recommend Wide Vision Safety Mask for use over eyeglasses or standard safety glasses with side shields. Always use eye protection which is marked to comply with ANSI Z87.1.

SAVE THESE INSTRUCTIONS

GLOSSARY OF TERMS

Air Filter

Porous element contained within a metal or plastic housing attached to the compressor cylinder head which removes impurity from the intake air of the compressor.

Air Tank

Cylindrical component which contains the compressed air.

Check Valve

Device that prevents compressed air from flowing back from the air tank to the compressor pump.

Cut-In Pressure

The low pressure at which the motor will automatically restart.

Cut-Off Pressure

The high pressure at which the motor will automatically shut off.

Electric Motor

Device which provides the rotational force necessary to operate the compressor pump.

Manual On/Off Switch

Control which turns the air compressor on or off. The pressure switch will not automatically start and control the compressor unless the manual On/Off Switch is in the **ON (I)** position.

NPT (National Pipe Thread)

National Pipe Thread is a U.S. standard for tapered (NPT) or straight (NPS) threads used to join pipes and fittings. A thread sealing tape must be used to provide a leak-free seal on pipe threaded connections.

Pressure Regulator Knob

Regulates the outgoing pressure from the air outlet to the tool. It is possible to increase or decrease the pressure at the outlet by adjusting this control knob.

Pressure Switch

Automatically controls the on/off cycling of the compressor. It stops the compressor when the cut-off pressure in the tank is reached and starts the compressor when the air pressure drops below the cut-in pressure.

PSI (Pounds Per Square Inch)

Measurement of the pressure exerted by the force of the air. The actual psi is measured by a pressure gauge on the compressor.

Pump

Produces the compressed air with a reciprocating piston contained within the cylinder.

Regulator Pressure Gauge

Displays the current line pressure. Line pressure is adjusted by rotating the pressure regulator knob.

Safety Valve

Prevents air pressure in the air tank from rising over a predetermined limit.

SCFM (Standard Cubic Feet Per Minute)

A unit of measure of air delivery.

Tank Pressure Gauge

Indicates the pressure in the air tank.

Thermal Overload Switch

Automatically shuts off the compressor if the temperature of the electric motor exceeds a predetermined limit.

TOOLS NEEDED

The following tools are needed in order to assemble the rubber foot kit.



TWO ADJUSTABLE WRENCHES

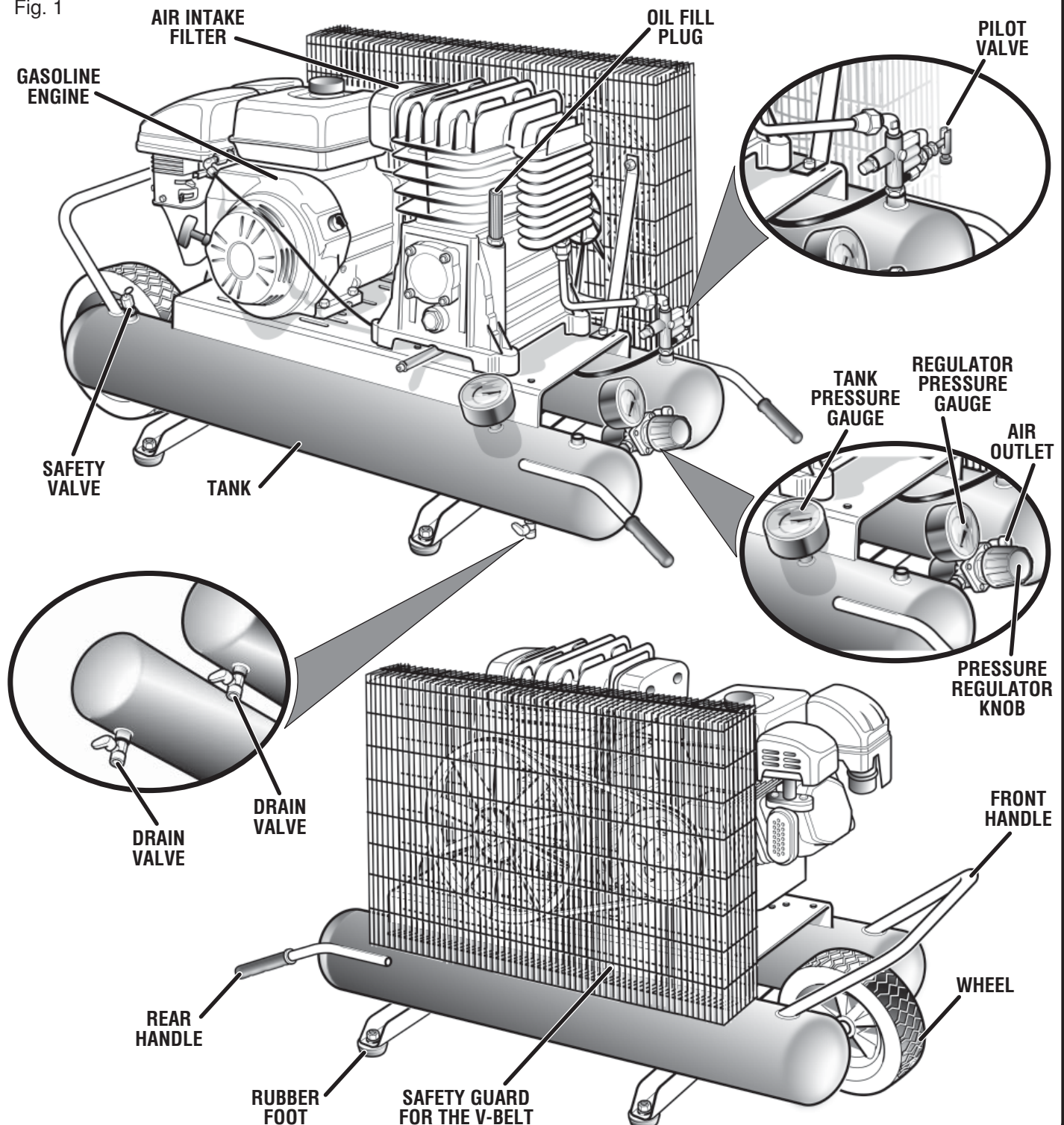
FEATURES

PRODUCT SPECIFICATIONS

Engine Displacement.....212 cc
 Air Tank Capacity..... 9 gal.
 Air Pressure.....135 PSI max.
 Air Delivery 11 SCFM @ 40 PSI
 9.5 SCFM @ 90 PSI

LubricationOil
 Gauges..... 1.5 in. diameter
 Net Weight.....150 lbs.

Fig. 1



FEATURES

KNOW YOUR AIR COMPRESSOR

See Figure 1.

Before attempting to use this product, familiarize yourself with all operating features and safety rules.

DESCRIPTION

Your air compressor is aircooled, splash lubricated, belt-driven, single stage.

DRIVE PULLEYS / FLYWHEELS

Drive pulleys and compressor flywheels must be properly aligned and tensioned to specifications. (*Refer to **Belt Alignment & Adjustment***).

WARNING!

Excessive compressor RPM's could cause a pulley or flywheel to shatter, possibly causing bodily harm or death. Do not operate the compressor above the recommended RPM as supplied by the factory.

GUARDS

They must provide protection from moving parts while still allowing full air flow for cooling purposes.

WARNING!

Guards must be fastened in place before starting the compressor. Always stop the unit before removing the guard.

CHECK VALVES

Check valves are designed to allow air to flow freely in one direction only. A properly sized check valve must be provided in the discharge line. *Do not rely on a check valve to isolate a compressor from a pressurized tank or compressed air delivery system during maintenance procedures.*

PRESSURE REGULATOR KNOB

The pressure regulator knob allows the operator to control the amount of air pressure being supplied to a tool (through the hose). A gauge is provided to indicate the air pressure. To adjust the amount of air pressure supplied:

- Pull up on the regulator knob to unlock it.
- Turn the knob clockwise to increase pressure - counterclockwise to decrease pressure.
- Push the knob down to lock it into position.

REGULATOR PRESSURE GAUGE

The current line pressure is displayed on the regulator pressure gauge. This pressure can be adjusted by rotating the pressure regulator knob.

SAFETY VALVES

Safety valves aid in preventing system failures by relieving system pressure when compressed air reaches a pre-determined pressure level. All air receivers must be equipped with an adequately sized safety valve. This type of valve is preset by the manufacturer and must not be modified in any way.

Safety valves are to be placed ahead of any potential blockage point which includes, but not limited to, shutoff valves, heat exchangers, pulsation dampeners, and discharge silencers. Ideally the safety valve should be threaded directly into the pressure point it is sensing, not connected with tubing or pipe, and always pointed away from any chance bystander. All tubing or piping added must be the same size as the safety valve opening or larger.

WARNING!

Safety valves must be provided to protect compressed air systems. Failure to provide properly sized pressure safety valves may cause property damage, severe personal injury or even death.

COMPRESSOR CONTROLS

Gasoline engine driven compressors are equipped with constant run controls and operate continuously until they are manually shut-off. During operation, air is compressed and delivered to the tanks for use. Once the demand for compressed air is satisfied, the in-line unloader (located in the compressor discharge line) is activated, causing the air delivered by the compressor to be discharged to the atmosphere, and allowing the engine to run at a lower speed. In this state, the system is considered to be "unloaded". As the air stored in the tanks is used and the demand for compressed air returns, the unloader is deactivated, the engine runs at a higher speed, and the compressed air is once again delivered to the tanks for use.

When starting an engine driven unit with air pressure in the tank, flip the toggle on side of the pilot valve to the horizontal position. This will unload the compressor and allow the engine to start easier.

When the engine has run for a few minutes, flip the toggle back to its original position.

AIR FILTER

This compressor is equipped with an air filter to provide a clean air supply, an essential component to the satisfactory operation of your compressor.

WARNING!

Never locate the compressor where toxic, volatile or corrosive vapors, air temperatures exceeding 104°F, water, or extremely dirty air could be ingested. The compressor could be damaged by these atmospheres and result in injury or death.

FEATURES

When using the compressor for spray painting, isolate the compressor as far away from the work area as practical, employing extra air hose rather than an extension cord. Warranty will be void if a failure is determined to be caused by dust, dirt or other contaminants.

COMPRESSED AIR DISCHARGE SYSTEM

WARNING!

Discharge piping can exceed 350°F when compressor is operating. Do not use plastic pipe or lead tin soldered joints for a discharge line. Do not modify the discharge line.

PRESSURE VESSELS

Air receiver tanks and other pressure containing vessels must be equipped with a properly sized pressure relief valve, pressure gauge, and a tank drain. The drain valve must be located in the bottom of the air tank(s) to provide for moisture removal.

WARNING!

Pressure vessels must not be modified, welded on, or repaired. Such actions may cause property damage, severe injury, or even death.

TANK PRESSURE GAUGE

The tank pressure gauge indicates the pressure of the air in the tank.

ASSEMBLY

UNPACKING

This product has been shipped completely assembled, except the four rubber feet.

- Carefully remove the compressor from the box. Make sure that all items listed in the packing list are included.
- Inspect the compressor carefully to make sure no breakage or damage occurred during shipping.
- Do not discard the packing material until you have carefully inspected and satisfactorily operated the tool.
- If any parts are damaged or missing, please call 1-800-444-3353 for assistance.

WARNING:

If any parts are missing do not operate the compressor or air tools until the missing parts are replaced. Failure to do so could result in possible serious personal injury.

WARNING:

Do not attempt to modify this tool or create accessories not recommended for use with this tool. Any such alteration or modification is misuse and could result in a hazardous condition leading to possible serious personal injury.

PACKING LIST

Air Compressor (1)
Operator's Manual (1)
Replacement Parts List (1)

INSTALLATION

Air compressors should be located in an area that is dry, clean, well lighted, and adequately ventilated.

DANGER!

A gas engine will produce carbon monoxide; always provide adequate ventilation! Do not operate engine in an enclosed area..

Air supplied to the inlet filter must be clean. The compressor belt guard must not be located closer than 12 inches to a wall, or 24 inches to another compressor. Additional safety can be achieved by locating the pulley drive system, with the guard, next to the wall.

The compressor may only be operated in temperatures under 104°F and over 32°F. In cold climates, the compressor should be installed in a heated building.

Proper mounting of the compressor unit is crucial to the safe operation and longevity of the equipment. The installation requires a stable, flat and level surface. Satisfactory results can usually be obtained by mounting the compressor unit on rubber feet supplied with the unit. Refer to **Fig. 2**. Uneven feet drawn tightly to a concrete floor or truck bed will cause severe vibrations resulting in cracked welds or fatigue failure. ***If the unit is mounted to a concrete floor or truck bed or similar foundation, loosen the lock nut several turns & lock it with a back-up nut!*** The customer

ASSEMBLY

is responsible for providing a suitable foundation & rubber foot mounting where necessary.

HIGH ALTITUDE APPLICATIONS

Refer to the engine manufacturer's recommendations for operation of engines at high altitudes.

DANGER!

Under no circumstances should a compressor be used in an area where toxic, volatile, or corrosive agents are used or stored near the compressor.

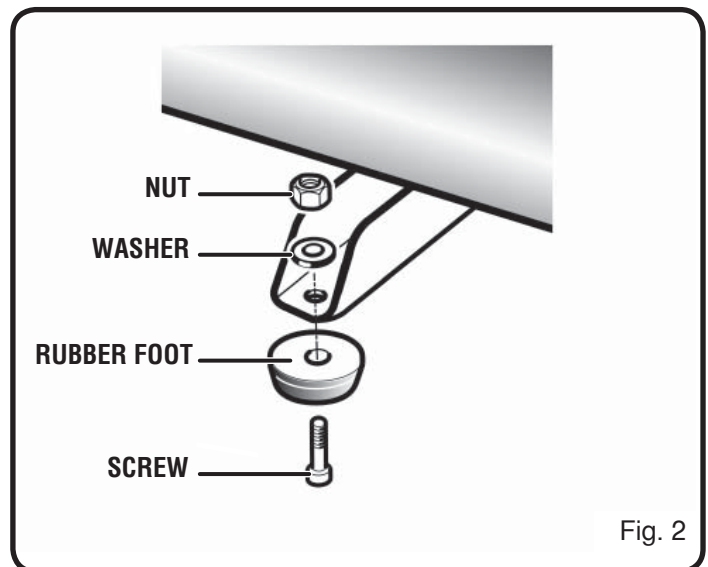
CAUTION!

Unusual noise or vibration indicates a problem. Do not operate the compressor until the source has been identified and corrected by a qualified technician.

ASSEMBLING THE RUBBER FOOT

See Figure 2.

- Mount the rubber foot as shown in figure. Tighten firmly with an open-end wrench (not included) to secure it in position.



OPERATION

DRAINING THE TANK

See Figure 3.

The drain valve is located on the underside of each air tank(s). The compressor can be tilted in the direction of the drain valve in order to allow removal of tank moisture. To help prevent tank(s) corrosion and keep moisture out of the air used, the tank(s) of the compressor should be drained daily.

⚠ WARNING!

Do not open a drain valve on any air tank containing more than 30 PSI of air pressure!

⚠ WARNING!

Never attempt to relieve air pressure in an air tank by removing a pipe plug or any other system component!

⚠ WARNING:

Unplug the air compressor and release all air from the tank before servicing. Failure to depressurize tank before attempting to remove valve may cause serious personal injury.

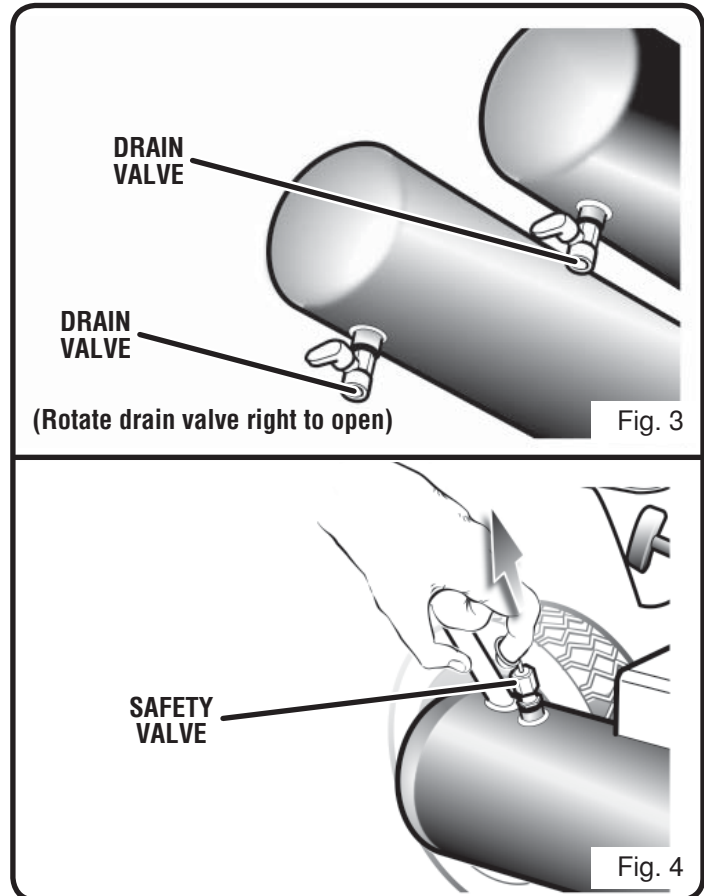
Tank(s) subjected to freezing temperatures may contain ice. Store the compressor in a heated area before attempting to drain moisture from the tank(s).

A correct use of the drain valve:

- Verify that the compressor is turned off.
- Disconnect the spark plug wire from the spark plug.
- Reduce the air pressure in the tank to 30 PSI by pulling the safety valve ring (Fig. 4).
- Position yourself so that the moisture and air to be expelled can not cause you harm.
- Holding the handle, tilt the compressor toward the drain valve so that it's set in a lower position.
- Open the drain valve completely, allowing the moisture and air mixture to drain from the tank.
- Keep the compressor tilted until all moisture has been removed.
- Once the moisture has been completely drained, close the drain valve.
- Drain moisture from tank into a suitable container.
NOTE: Condensate is a polluting material and should be disposed of in compliance with local regulations.
- If drain valve is clogged, release all air pressure by pulling the safety valve. Remove and clean valve, then reinstall.

⚠ WARNING:

Do not attempt to tamper with safety valve. Anything loosened from this device could fly up and hit you. Failure to heed this warning could result in death or serious personal injury.



- Turn off drain valve until completely closed.

CHECKING THE SAFETY VALVE

See Figure 4.

⚠ WARNING:

If air leaks after the ring has been released, or if the valve is stuck and cannot be actuated by the ring, Do Not use the air compressor until the safety valve has been replaced. Use of the air compressor in this condition could result in serious personal injury.

The safety valve will automatically release air if the air receiver pressure exceeds the preset maximum. The valve should be checked before each day of use by pulling the ring by hand.

- Turn the air compressor on and allow the tank to fill. The compressor will shut off when the pressure reaches the preset maximum.
- Turn the air compressor off.
- Pull the ring on the safety valve to release air for twenty seconds.
- Release the ring. Air must immediately stop escaping when the ring is released. Any continued loss of air after releasing the safety valve ring indicates a problem with the safety valve. Discontinue use and seek service before continued use of the air compressor.

OPERATION



WARNING:

Do not allow familiarity with tools to make you careless. Remember that a careless fraction of a second is sufficient to inflict serious injury.



WARNING:

Always wear safety goggles or safety glasses with side shields when operating power tools. Failure to do so could result in objects being thrown into your eyes resulting in possible serious injury.

CAUTION:

Do not use in an environment that is dusty or otherwise contaminated. Using the air compressor in this type of environment may cause damage to the unit.

APPLICATIONS

Air compressors are utilized in a variety of air system applications. Match hoses, connectors, air tools, and accessories to the capabilities of the air compressor.

You may use this tool for purposes listed below:

- Operating some air-powered tools.
- Inflating tires, air beds, sports equipment, etc.

PRE-STARTING CHECKLIST



WARNING!

Failure to perform the PRE-STARTING CHECKLIST may result in mechanical failure, property damage, serious injury or even death.

The following steps should be performed prior to operating the unit. If any condition of the checklist is not satisfied, make the necessary adjustments or corrections before starting the compressor.



WARNING!

Never assume a compressor is safe to work on just because it is not operating. It could restart at any time. Follow all safety precautions outlined in **MAINTENANCE**.

- The compressor is shipped with lubricant in the crankcase. Check lubricant level per specifications (using the instruction found in **Lubrication**).
- Make sure all safety valves are correctly installed. (using the instruction found in **Features**).
- Be sure all guards are in place and securely mounted (using the instruction found in **Features**).

- Drain moisture from the air tank(s). Never attempt to drain the tank(s) without first relieving the system pressure (using the instruction found in **Draining the Tank**).

STARTING & STOPPING THE COMPRESSOR

- Connect the air line to the quick coupler.
- Rotate regulator knob fully counterclockwise in order to close the air flow.
- Ensure both drain valves are closed.
- Fill the engine with oil through oil fill hole.
- Fill the compressor pump with oil. Do not overfill.
- Fill the fuel tank with fuel.
- Open the petcock on the unloader valve for cold starts (turn clockwise or in).
- Flip the toggle on the pilot valve to the “MANUAL UNLOAD” position (see **Pilot Valve Adjustments**).
- Start the gas engine (refer to **gas engine owner’s manual** for more detailed start-up procedures):
 - Adjust choke and open fuel valve.
 - Pull the cord.
 - Move choke to run.
- Watch and listen for excessive vibration and unusual noises. If either exist, stop the compressor and refer to **Troubleshooting**.
- Allow the compressor to run for a few minutes.
- Close the petcock (turn counterclockwise or out).
- Flip the toggle on the pilot valve to the “RUN” position. The compressor should pump up the tank to 135 PSI, then unload. If pressure exceeds 135 PSI, see **Troubleshooting**.
- New compressors should be run with approximately 80 PSI of air pressure in the tank for 1 hour to break-in (use regulator to control tank pressure). This will allow the compressor time to warm up and seat the rings.
- To stop the compressor, shut the engine off.

USING THE AIR COMPRESSOR

See Figure 5.



WARNING:

Always ensure the regulator pressure gauge read zero before changing air tools or disconnecting the hose from the air outlet. Failure to do so could result in possible serious personal injury.

- Rotate pressure regulator knob to desired line pressure. Turning the knob clockwise increases air pressure at the outlet; turning counterclockwise reduces air pressure at the outlet.

OPERATION



WARNING:

Your tool may require more air consumption than this air compressor is capable of providing. Check the tool manual to avoid damage to the tool or risk of personal injury.

- Following all safety precautions in this manual and the manufacturer's instructions in the air tool manual, you may now proceed to use your air-powered tool.
- If using an inflation accessory, control the amount of air flow with the pressure regulator knob. Turning the knob fully counterclockwise will completely stop the flow of air.

NOTE: Always use the minimum amount of pressure necessary for your application. Using a higher pressure than needed will drain air from the tank more rapidly and cause the unit to cycle on more frequently.

- When finished, always drain the tank and stop the compressor. Never leave the unit in running unattended.

END OF OPERATION/STORAGE

- Shut off the engine.
- Disconnect the spark plug wire from the spark plug and wrap around handle area to prevent damage when not in use.
- Wearing safety glasses drain tank of air by pulling the ring on the safety valve. Use other hand to deflect fast moving air from being directed toward your face.
- Drain tank of condensation by opening both drain valves on bottom of tank. Tank pressure should be below 10 psi when draining tank.
- Air hose should be disconnected from compressor and hung open ends down to allow any moisture to drain.
- Compressor and hose should be stored in a cool, dry place.

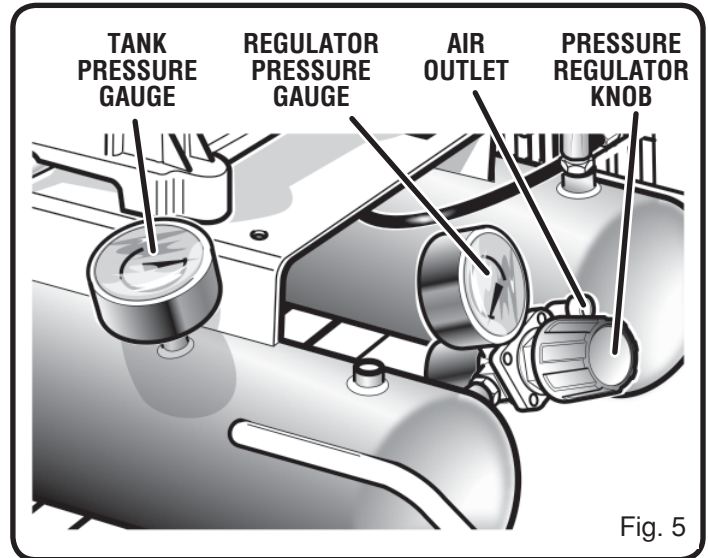


Fig. 5

MAINTENANCE

WARNING:

When servicing, use only identical Harbor Freight Tools replacement parts. Use of any other parts may create a hazard or cause product damage.

WARNING:

Always wear safety goggles or safety glasses with side shields during power tool operation or when blowing dust. If operation is dusty, also wear a dust mask.

WARNING:

Prior to performing any maintenance or repair, always shut off the engine and remove the plug wire from the spark plug.

WARNING:

Completely relieve the system of air pressure by pulling the ring on the safety valve. Continue to pull the ring until all air pressure escapes (Fig. 4).

WARNING:

Wait for the unit to cool before starting to service. Some surface temperatures exceed 350°F when the unit is operating.

WARNING:

Do not at any time let brake fluids, gasoline, petroleum-based products, penetrating oils, etc., come in contact with plastic parts. Chemical can damage, weaken or destroy plastic which may result in serious personal injury. Electric tools used on fiberglass material, wall-board, spackling compounds, or plaster are subject to accelerated wear and possible premature failure because the fiberglass chips and grindings are highly abrasive to bearings, brushes, commutators, etc. Consequently, we do not recommend using this tool for extended work on these type of materials. However, if you do work with any of these materials, it is extremely important to clean the tool using compressed air.

MAINTENANCE SCHEDULE

Refer to the **gas engine owner's manual** for maintenance procedures to be performed on the engine. If the unit is used in an excessively dirty or dusty environment, check and perform all maintenance procedures more often.

After First 100 Hours or First Month of Operation (whichever occurs first)

- Replace break-in lubricant with SAE 40W oil (refer to **Lubrication**).

Daily

- Maintain lubricant level at the halfway point on the sightglass. Discolored lubricant or a higher lubricant level reading may indicate the presence of condensed liquids (refer to **Troubleshooting**).
- Humidity in the air causes condensate to form in the air tank. Drain moisture from air tank(s) (refer to **Draining the Tank**). Tank(s) subjected to freezing temperatures may contain ice. Store the compressor in a heated area before attempting to drain moisture from the tank(s).
- Give compressor overall visual inspection and be sure safety guards are in place.
- Check for any unusual noise or vibration.
- Check for leaks.

Weekly

- The safety valve automatically releases air if the air receiver pressure exceeds the preset maximum. Check the safety valve before each use, following the instructions found in **Checking the Safety Valve**. Pull on the ring of the safety valves to make sure they are operating correctly. Air pressure should escape when the ring is pulled (refer to Fig. 4).
- Check all pressurized components for rust, cracking or leaking. Immediately discontinue use of the equipment and relieve all system pressure if any of these problems are discovered. Do not use the equipment until it has been inspected and repaired by a qualified mechanic.
- Clean the exterior surfaces of the compressor.
- Check the air filter and replace if necessary.

Monthly

- Check belt tension.
- Check pulley retaining screws.
- Check system for air leaks.

Every 3 Months or Every 300 hrs. of Operation (whichever occurs first)

- Change lubricant.

MAINTENANCE

Yearly

Inspect the tank yearly for rust, pin holes, or other imperfections that could cause it to become unsafe.

Avoid using solvents when cleaning plastic parts. Most plastics are susceptible to damage from various types of commercial solvents and may be damaged by their use. Use clean cloths to remove dirt, dust, oil, grease, etc.

LUBRICATION

See Figure 6.

Before starting this compressor, check the lubricant level. Place the compressor on a level and straight surface. The oil level should register at the halfway point on the sightglass. Remove the oil fill plug to add lubricant. **Do not overfill.**

Ambient Temperature	SAE Viscosity
30-104°F	SAE 40
Below 30°F	SAE 30

Do not use petroleum based automotive oils because specific types have a tendency to foam and leave carbon deposits when used in compressors.

How to change the oil

See Figures 13.

Shut off the engine. After releasing any air pressure you can unscrew the oil fill plug from the compressor pump. To prevent the oil from running out in an uncontrolled manner, hold a small metal chute under the opening and collect the oil in a vessel. If the oil does not drain out completely, we recommend tilting the compressor slightly.

Dispose of the old oil at a drop-off point for old oil. When the oil has drained out, re-fit the oil fill plug. Fill new oil through the oil filler opening (ref. 14) until it comes up to the required level. Then replace the oil drain plug.

Condensation

Rust can form inside the crankcase and on internal components as a result of condensation. A compressor must operate long enough during each run cycle to reach full operating temperature in order to reduce the risk of condensation.

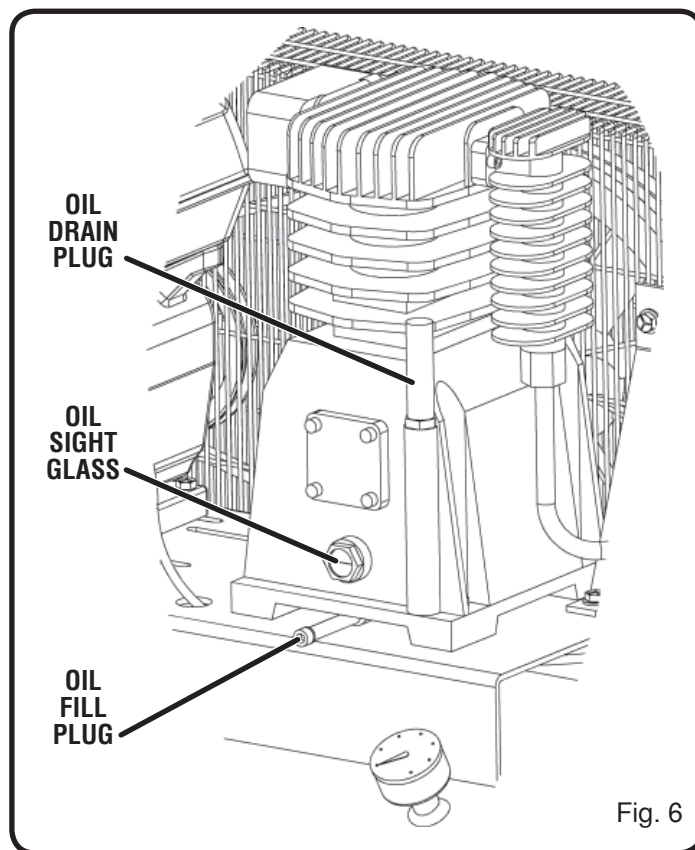


Fig. 6

CAUTION:

Lubricant that appears milky may have mixed with condensate. Failure to replace contaminated lubricant will result in damage to the compressor and may void warranty.

Condensation can also form in the air tank of your compressor. When this happens, a mixture of air and moisture will be expelled through the service valve and into whatever is connected to the valve (e.g. air hoses, metal air lines, pneumatic tools, spray guns). An in-line filter, may be required to eliminate the moisture.

Condensation in the air tank can be kept to a minimum by draining the tank on a daily basis. This also reduces the risk of rust developing and weakening the tank.

MAINTENANCE

BELT ALIGNMENT & ADJUSTMENT

See Figures 7 - 8 - 9 - 10.

Drive belts tend to stretch with normal use and require adjustment periodically (check monthly). In order to adjust the drive belt, the belt guard must be removed.

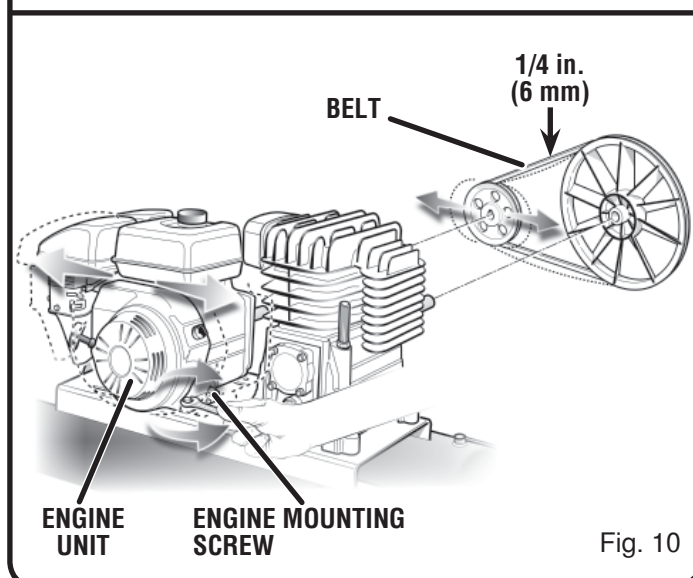
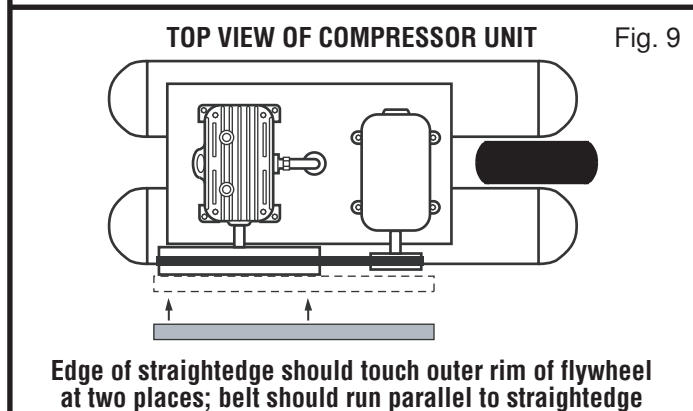
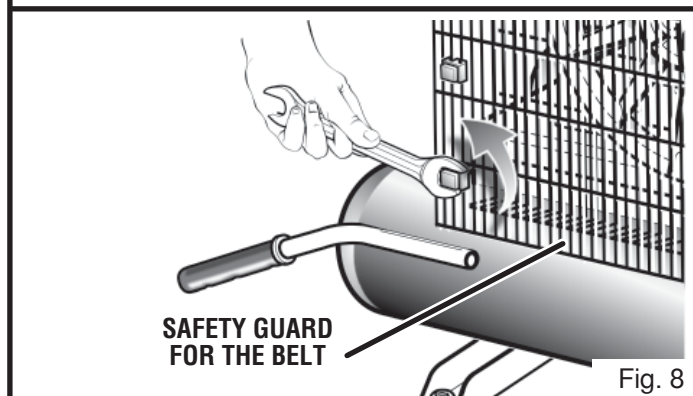
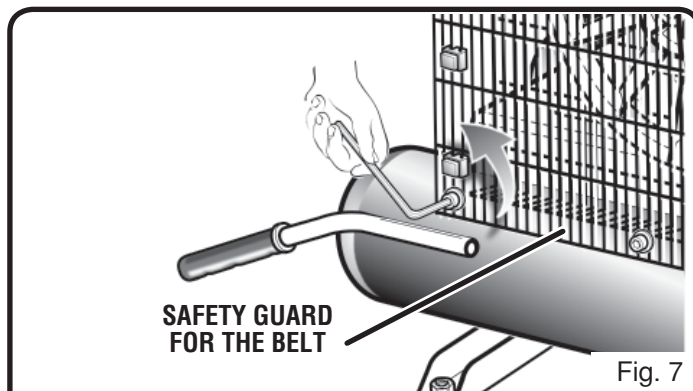
In order to remove the belt guard, follow the instructions shown in figures 7 - 8.

Check the belt alignment by placing a straightedge against the face of the flywheel, touching its rim at two places (refer to Fig. 9). Adjust the flywheel or motor pulley so that the belt runs parallel to the straightedge. Use a puller to move the motor pulley on the shaft.

Properly adjusted, a 3 pound pressure applied to the belt between the motor pulley and the compressor flywheel will deflect the belt about 1/4" (6mm). Refer to Fig. 10.

To adjust the belt tension, perform the following operations:

- Loosen the four engine mounting screws.
- Slide the engine in the proper direction, until the belt is tensioned to the point where it can still be depressed by approx. 1/4" (6mm) at the longest free position.
- Re-tighten the engine mounting screws and refit the safety guard for the belt.

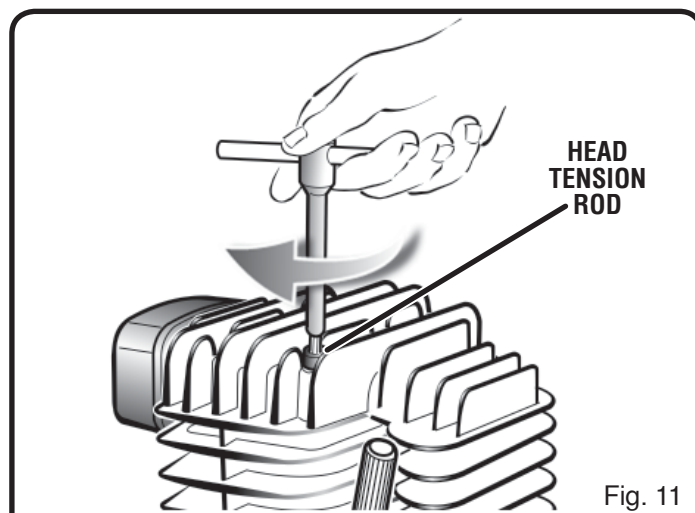


MAINTENANCE

TIGHTENING OF HEAD TENSION RODS

See Figure 11.

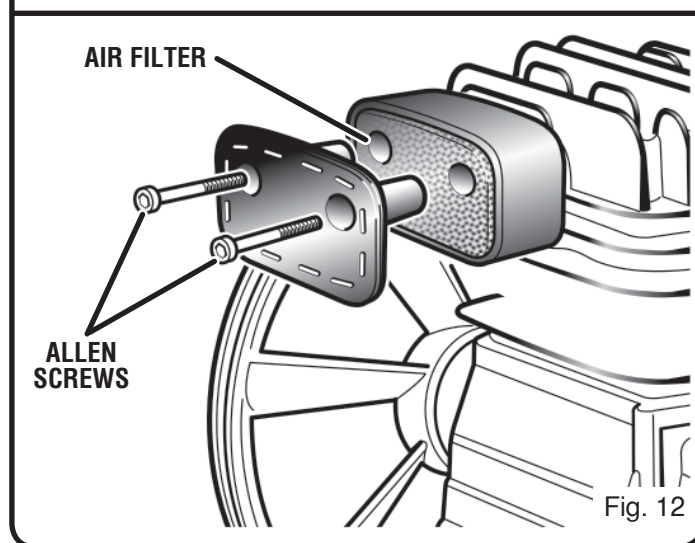
- Check that all screws (in particular those of the head of the unit) are tightly drawn up.
- The check must be carried out prior to the first compressor starting. And after the first hour of work.
- Tightening values for the tension rods of the head:
Nm min. torque = 22
Nm max. torque = 27



CLEANING THE INTAKE FILTER

See Figure 12.

The intake filter prevents dust and dirt being drawn in. It is essential to clean this filter after at least every 100 hours in service. A clogged intake filter will decrease the compressor's performance dramatically. Undo the two allen screws (Figure 18). You can then remove the filter from the two halves of the plastic housing, tap it to remove the dirt, blast it down with low-pressure compressed air (approx. 3 bar) and re-insert it (Figure 12).



MAINTENANCE

PILOT VALVE ADJUSTMENTS

See Figures 13 - 14.

All adjustments made to the pilot valve must be performed by a qualified technician. The adjustments must be made while the unit is operating, therefore, extreme caution must be taken while working on the unit.

Observe all necessary precautions. Always use a back-up wrench and make all differential and unload pressure adjustments in very small increments (1/8 turn).

WARNING!

The pilot valve are set at the factory for maximum efficiency. Adjustments to either component must be performed by a qualified technician. Exceeding the factory recommended maximum pressure will void the warranty and may cause personal injury.

Setting Unload Pressure (Fig. 13)

- Step 1.** Flip the toggle to the "RUN" position as shown, or turn the knurled knob (if so equipped) counterclockwise until it stops.
- Step 2.** Loosen locknut (counterclockwise).
* **Stabilize with back-up wrench!**
- Step 3.** Turn clockwise to increase unload pressure, turn counterclockwise to decrease unload pressure. Hold position with wrench and proceed to **Step 4**.
- Step 4.** Tighten locknut (clockwise) with wrench.
* **Stabilize with back-up wrench!**

Setting Differential Pressure (Fig. 14)

- Step 5.** Loosen locknut (counterclockwise).
* **Stabilize with back-up wrench!**
- Step 6.** Turn clockwise to decrease the differential pressure and counterclockwise to increase the differential pressure. Hold position with wrench and proceed to **Step 7**.
- Step 7.** Tighten locknut (clockwise) with wrench.
* **Stabilize with back-up wrench!**

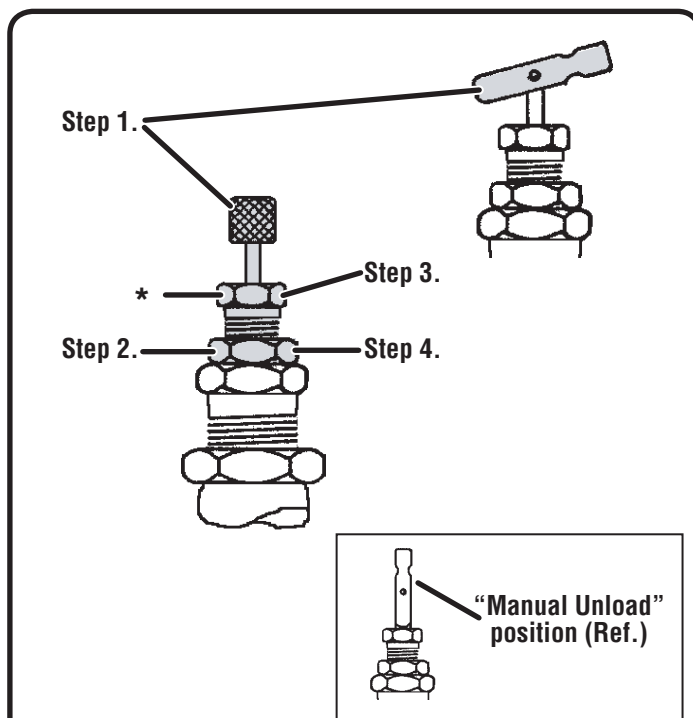


Fig. 13

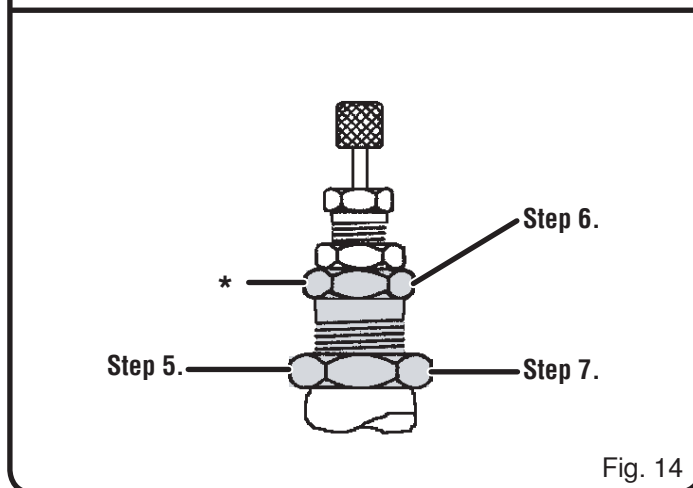


Fig. 14

TROUBLESHOOTING

Read and understand all the safety rules listed in this manual and follow all procedures listed in **MAINTENANCE** before making repairs. Refer to the **gas engine owner's manual** for troubleshooting the gas engine.

Problem	Possible Cause	Solution
<p>Motor hums or runs slowly when first turned on, but compressor does not start.</p> <p>Motor then stops humming.</p> <ul style="list-style-type: none"> - Fuses blow - Circuit breakers trip - Motor thermal overload trips 	<p>Lubricant being used is too heavy.</p> <p>Too many lights or appliances being operated on the same circuit as the compressor (circuit overloaded).</p> <p>Defective check valve or unloader.</p> <p>Freezing temperature.</p> <p>Motor sized incorrectly.</p> <p>Drive belt too tight.</p> <p>Incorrect size fuse or circuit breaker.</p> <p>Lack of proper ventilation room temperature too high.</p>	<p>Use a lighter weight lubricant (refer to LUBRICATION).</p> <p>Try another circuit or remove other appliances from circuit being used.</p> <p>Replace check valve or unloader.</p> <p>Warm the compressor or use a lighter weight lubricant (refer to LUBRICATION).</p> <p>Replace with correctly sized motor.</p> <p>Re-adjust belt (refer to BELT ALIGNMENT & ADJUSTMENT).</p> <p>Check for proper size fuse.</p> <p>Move the compressor to a well ventilated area.</p>
Compressor won't operate.	<p>Defective engine.</p> <p>Lack of lubricant in compressor (can cause serious damage to compressor).</p> <p>Belt too tight or too loose.</p>	<p>Replace or repair engine.</p> <p>Add lubricant (refer to LUBRICATION).</p> <p>Adjust belt (refer to BELT ALIGNMENT & ADJUSTMENT).</p>
Noisy operation.	<p>Lack of lubricant in crankcase.</p> <p>Loose pulley, flywheel, belt, compressor or motor fasteners, beltguard, clamps or accessories.</p> <p>Carbon deposits on piston or valves.</p> <p>Worn main bearings, broken piston, worn wrist pins, wrist pin bearings, or loose connecting rod bolt.</p>	<p>Check for possible damage to bearings. Add lubricant (refer to LUBRICATION).</p> <p>Tighten where necessary.</p> <p>Remove the cylinder head and inspect for foreign matter on top of the piston. Clean.</p> <p>Take compressor to Service Center.</p>
Excessive vibrations.	<p>Pulley & flywheel misaligned or loose.</p> <p>Bent crankshaft.</p> <p>Belt loose.</p>	<p>Re-align or tighten pulley and flywheel.</p> <p>Take compressor to Service Center.</p> <p>Tighten belt (refer to BELT ALIGNMENT & ADJUSTMENT).</p>

TROUBLESHOOTING

Problem	Possible Cause	Solution
Excessive lubricant consumption and/or excessive lubricant in hose.	<p>Crankcase overfilled with lubricant.</p> <p>Lubricant leaks.</p> <p>Worn piston rings.</p> <p>Wrong lubricant viscosity.</p> <p>Compressor on unlevel surface.</p> <p>Scored cylinder.</p> <p>Plugged crankcase breather.</p>	<p>Drain lubricant. Refill to proper level with proper lubricant (refer to LUBRICATION).</p> <p>Tighten bolts on compressor to proper torque or replace gaskets.</p> <p>Take compressor to Service Center.</p> <p>Drain lubricant & refill with proper lubricant (refer to LUBRICATION).</p> <p>Level compressor.</p> <p>Take compressor to Service Center.</p> <p>Clean or replace crankcase breather.</p>
Air blowing from inlet filter.	Damaged inlet (reed) valve.	Take compressor to Service Center.
Insufficient pressure at tool or accessory.	<p>Leaks or restrictions.</p> <p>Restricted air intake (filter plugged).</p> <p>Slipping belt.</p> <p>Hose or hose connectors too small.</p> <p>Compressor incorrectly sized.</p> <p>Regulator not turned up to high enough pressure / faulty regulator.</p> <p>Leaking valves in compressor.</p>	<p>Check for leaks or restrictions in hose or piping. Repair.</p> <p>Replace air filter.</p> <p>Tighten belt (refer to BELT ALIGNMENT & ADJUSTMENT).</p> <p>Replace with larger hose or connectors.</p> <p>Either use a smaller tool or a larger compressor.</p> <p>Turn the regulator to the proper setting / replace faulty regulator.</p> <p>Take compressor to Service Center.</p>
Tank loses pressure rapidly when compressor shuts off.	<p>Loose connection or leak (pipe, tank drain valve, tubing, fitting or hose).</p> <p>Faulty check valve.</p>	<p>Turn unit off, unplug it, & tighten or replace fittings or components.</p> <p>Replace faulty check valve.</p>
Moisture in discharge air.	Condensation in tank, caused by high level of atmospheric humidity or compressor is not run long enough.	Drain tank after every use. Drain tank more frequently in humid weather & use an air line filter.
Pressure in tank exceeds 135 PSI.	<p>Defective pilot valve.</p> <p>Incorrectly adjusted pilot valve.</p>	<p>Replace defective pilot valve.</p> <p>Readjust pilot valve (see PILOT VALVE ADJUSTMENT)</p>
Crankcase lubricant is milky.	Water in lubricant due to humidity or condensation.	Change lubricant. Move compressor to less humid atmosphere.
Compressor runs backwards.	Reversed wiring polarity.	Contact qualified electrician.
Belt roll over.	Misaligned belts.	Align belts (Refer to BELT ALIGNMENT & ADJUSTMENT).
	Loose belt.	Tighten belts (Refer to BELT ALIGNMENT & ADJUSTMENT).

TROUBLESHOOTING

Problem	Possible Cause	Solution
Compressor overheats.	<p>High ambient temperature, poor ventilation.</p> <p>Dirty cylinder and head cooling fins.</p> <p>Unit is undersized for application.</p> <p>Insufficient lubrication.</p> <p>Compressor runs backward.</p> <p>One or more head valves failing to seat properly.</p> <p>Damaged cylinder head gasket.</p> <p>Restriction in head or check valve.</p>	<p>Increase ventilation with cooler air.</p> <p>Clean all outer surfaces of the compressor.</p> <p>Re-evaluate application requirements; re-size compressor unit if necessary.</p> <p>Inspect for proper lubricant and amount (refer to LUBRICATION)</p> <p>Contact qualified electrician.</p> <p>Take compressor to Service Center.</p> <p>Take compressor to Service Center.</p> <p>Inspect, clean or replace.</p>

Limited 90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

WARNING: The brass components of this product contain lead, a chemical known to the State of California to cause birth defects (or other reproductive harm). (California Health & Safety code § 25249.5, *et seq.*)

CENTRALPNEUMATIC®

3491 Mission Oaks Blvd. • PO Box 6009 • Camarillo, CA 93011 • (800) 444-3353

Owner's Manual & Safety Instructions

Save This Manual Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

REV 15a

PREDATORTM E N G I N E S

212cc Horizontal Engine



⚠ DANGER

Using an engine indoors
CAN KILL YOU IN MINUTES.

Engine exhaust contains carbon monoxide.
This is a poison you cannot see or smell.



NEVER use inside
a home or garage,
EVEN IF doors and
windows are open.

Only use OUTSIDE
and far away from
windows, doors,
and vents.

Visit our website at: <http://www.harborfreight.com>

Email our technical support at: predator@harborfreight.com

ITEM 69783

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.

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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools. Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein. Tools required for assembly and service may not be included.

⚠ WARNING

**Read this material before using this product.
Failure to do so can result in serious injury.
SAVE THIS MANUAL.**

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Safety	3	Troubleshooting	16
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Operation	8	Parts Lists and Diagrams	20

Specifications




Displacement		212cc
Engine Type		Horizontal Single Cylinder 4 stroke OHV Meets EPA phase III emissions standards
Cooling System		Forced air cooled
Fuel	Type	87+ octane stabilizer treated unleaded gasoline
	Capacity	9 Gallon (3.6 Liter)
Engine Oil	Type SAE	10W-30 above 32° F 5W-30 at 32° F or below
	Capacity	0.5 Quart
Run Time @ 50% Load with full tank		3 hr.
Sound Level at 22 feet		104 dB
Bore x Stroke		70 mm x 55 mm
Compression Ratio		8.5:1
Rotation viewed from PTO (power takeoff - the output shaft)		Counterclockwise
Shaft	Shaft	3/4" x 2.43"
	Keyway	3/16" (4.76 mm)
	End Tapped	5/16" - 24 UNF
Spark Plug	Type	NGK® BP-6ES NHSP® / Torch® F6TC
	Gap	0.7 - 0.8 mm
Valve Clearance	Intake	0.10 - 0.15 mm
	Exhaust	0.15 - 0.20 mm
Speed	Idle	1,800 ± 50 RPM




PREDATOR[™]
E N G I N E S

WARNING SYMBOLS AND DEFINITIONS

	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
 DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
 WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE CAUTION	Addresses practices not related to personal injury.

Symbol Definitions

Symbol	Property or Statement
RPM	Revolutions Per Minute
HP	Horsepower
	WARNING marking concerning Risk of Eye Injury. Wear ANSI-approved safety goggles with side shields.
	Read the manual before set-up and/or use.
	WARNING marking concerning Risk of Hearing Loss. Wear hearing protection.

Symbol	Property or Statement
	WARNING marking concerning Risk of Respiratory Injury. Operate engine OUTSIDE and far away from windows, doors, and vents.
	WARNING marking concerning Risk of Fire while handling fuel. Do not smoke while handling fuel.
	WARNING marking concerning Risk of Fire. Do not refuel while operating. Keep flammable objects away from engine.

Safety Warnings



WARNING! Read all instructions.

Failure to follow all instructions listed below may result in fire, serious injury and/or DEATH.




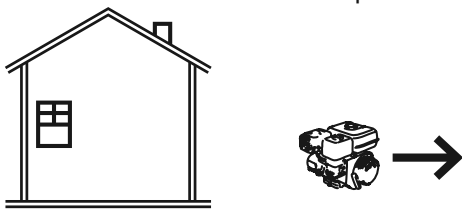
The warnings and precautions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

SAVE THESE INSTRUCTIONS

Set up Precautions

1. Gasoline fuel and fumes are flammable, and potentially explosive. Use proper fuel storage and handling procedures. Do not store fuel or other flammable materials nearby.
2. Have multiple ABC class fire extinguishers nearby.
3. Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrestor may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.
4. Set up and use only on a flat, level, well-ventilated surface.
5. Wear ANSI-approved safety goggles, heavy-duty work gloves, and dust mask/respirator during set up.
6. Use only lubricants and fuel recommended in the Specifications chart of this manual.

Operating Precautions

1.  **CARBON MONOXIDE HAZARD**
Using an engine indoors CAN KILL YOU IN MINUTES.
Engine exhaust contains carbon monoxide. This is a poison you cannot see or smell.
 
NEVER use inside a home or garage, EVEN IF doors and windows are open.

Only use OUTSIDE and far away from windows, doors, and vents.
2. Keep children away from the equipment, especially while it is operating.
3. Keep all spectators at least six feet from the Engine during operation.
4. Fire Hazard! Do not fill gas tank while engine is running. Do not operate if gasoline has been spilled. Clean spilled gasoline before starting engine. Do not operate near pilot light or open flame.
5. Do not touch engine during use. Let engine cool down after use.
6. Never store fuel or other flammable materials near the engine.
7. Only use a suitable means of transport and lifting devices with sufficient weight bearing capacity when transporting the Engine.
8. Secure the Engine on transport vehicles to prevent the tool from rolling, slipping, and tilting.
9. Industrial applications must follow OSHA requirements.
10. Do not leave the equipment unattended when it is running. Turn off the equipment (and remove safety keys, if available) before leaving the work area.
11. Engine can produce high noise levels. Prolonged exposure to noise levels above 85 dBA is hazardous to hearing. Always wear ear protection when operating or working around the gas engine while it is operating.
12. Wear ANSI-approved safety glasses, hearing protection, and NIOSH-approved dust mask/respirator under a full face shield along with steel-toed work boots during use.
13. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to a heart pacemaker could cause pacemaker interference or pacemaker failure. Caution is necessary when near the engine's magneto or recoil starter.
14. Use only accessories that are recommended by Harbor Freight Tools for your model. Accessories that may be suitable for one piece of equipment may become hazardous when used on another piece of equipment.
15. Do not operate in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Gasoline-powered engines may ignite the dust or fumes.
16. Stay alert, watch what you are doing and use common sense when operating this piece of equipment. Do not use this piece of equipment while tired or under the influence of drugs, alcohol or medication.
17. Do not overreach. Keep proper footing and balance at all times. This enables better control of the equipment in unexpected situations.
18. Use this equipment with both hands only. Using equipment with only one hand can easily result in loss of control.
19. Dress properly. Do not wear loose clothing or jewelry. Keep hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.

Operating Precautions (cont.)

20. Parts, especially exhaust system components, get very hot during use. Stay clear of hot parts.
21. Do not cover the engine or equipment during operation.
22. Keep the equipment, engine, and surrounding area clean at all times.
23. Use the equipment, accessories, etc., in accordance with these instructions and in the manner intended for the particular type of equipment, taking into account the working conditions and the work to be performed. Use of the equipment for operations different from those intended could result in a hazardous situation.
24. Do not operate the equipment with known leaks in the engine's fuel system.
25. **WARNING:** This product contains or, when used, produces a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. (California Health & Safety Code § 25249.5, *et seq.*)
26. When spills of fuel or oil occur, they must be cleaned up immediately. Dispose of fluids and cleaning materials as per any local, state, or federal codes and regulations. Store oil rags in a bottom-ventilated, covered, metal container.
27. Keep hands and feet away from moving parts. Do not reach over or across equipment while operating.
28. Before use, check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the equipment's operation. **If damaged, have the equipment serviced before using.** Many accidents are caused by poorly maintained equipment.
29. Use the correct equipment for the application. Do not modify the equipment and do not use the equipment for a purpose for which it is not intended.

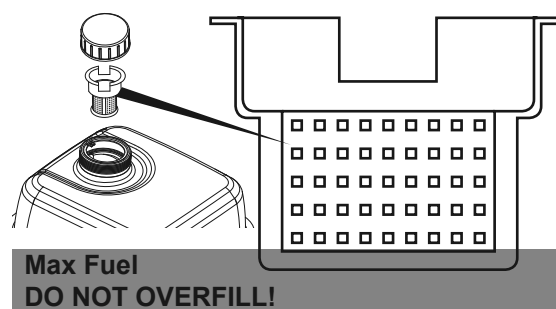
Service Precautions

1. **Before service, maintenance, or cleaning:**
 - a. Turn the engine switch to its "OFF" position.
 - b. Allow the engine to completely cool.
 - c. Then, remove the spark plug cap from the spark plug.
2. Keep all safety guards in place and in proper working order. Safety guards include muffler, air cleaner, mechanical guards, and heat shields, among other guards.
3. **Do not alter or adjust any part of the equipment or its engine that is sealed by the manufacturer or distributor. Only a qualified service technician may adjust parts that may increase or decrease governed engine speed.**
4. Wear ANSI-approved safety goggles, heavy-duty work gloves, and dust mask/respirator during service.
5. Maintain labels and nameplates on the equipment. These carry important information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
6. Have the equipment serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the equipment is maintained. Do not attempt any service or maintenance procedures not explained in this manual or any procedures that you are uncertain about your ability to perform safely or correctly.
7. Store equipment out of the reach of children.

8. Follow scheduled engine and equipment maintenance.

Refueling:

1. Do not smoke, or allow sparks, flames, or other sources of ignition around the equipment, especially when refueling.
2. Do not refill the fuel tank while the engine is running or hot.
3. **TO PREVENT FUEL LEAKAGE AND FIRE HAZARD, do not fill fuel above the bottom of fuel strainer.**



4. Do not fill fuel tank to the top. Leave a little room for the fuel to expand as needed.
5. Refuel in a well-ventilated area only.
6. Wipe up any spilled fuel and allow excess to evaporate before starting engine. **To prevent FIRE, do not start the engine while the smell of fuel hangs in the air.**



SAVE THESE INSTRUCTIONS.

Set Up



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

WARNING

TO PREVENT SERIOUS INJURY:

Operate only with proper spark arrestor installed.

Operation of this equipment may create sparks that can start fires around dry vegetation.

A spark arrestor may be required.

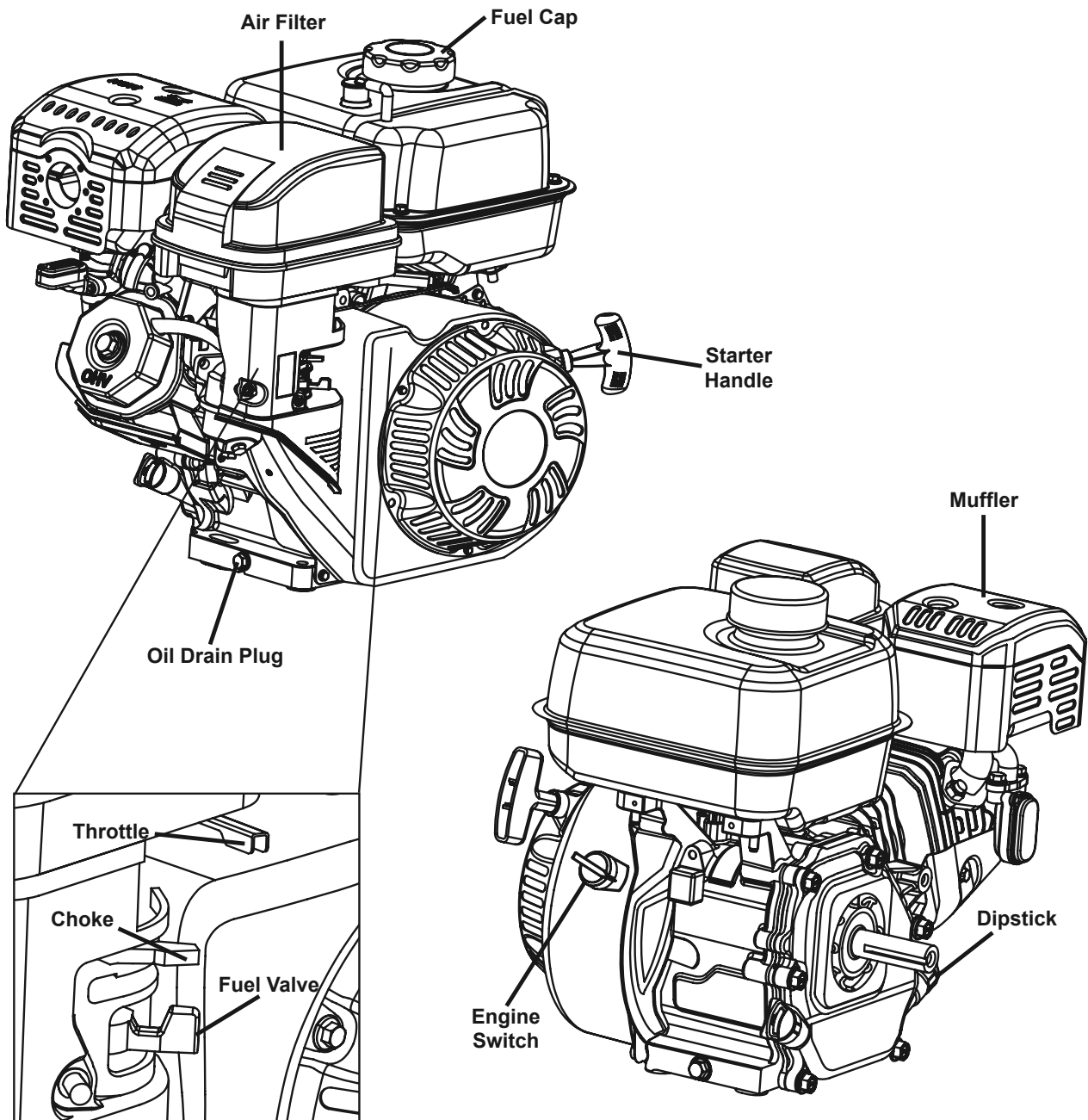
The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

At high altitudes, the engine's carburetor, governor (if so equipped), and any other parts that control the fuel-air ratio will need to be adjusted by a qualified mechanic to allow efficient high-altitude use and to prevent damage to the engine and any other devices used with this product.

The emission control system for this Engine is warranted for standards set by the U.S. Environmental Protection Agency and by the California Air Resources Board (also known as CARB). For warranty information, refer to the last pages of this manual.

WARNING! DO NOT INSTALL THIS ENGINE ON A VEHICLE.

Engine Controls



High Altitude Operation Above 3000 feet

The fuel system on this engine may be influenced by operation at higher altitudes. Proper operation can be ensured by installing an altitude kit at altitudes higher than 3000 ft. above sea level. At elevations above 8000 ft, the engine may experience decreased performance, even with the proper main jet. Operating this engine without the proper altitude kit installed may increase the engine's emissions and decrease fuel economy and performance. The kit should be installed by a qualified mechanic.

⚠ WARNING! TO PREVENT SERIOUS INJURY FROM FIRE:

Follow kit procedures in a well-ventilated area away from ignition sources. If the engine is hot from use, shut the engine off and wait for it to cool before proceeding. Do not smoke.

NOTICE Warranty void if necessary adjustments are not made for high altitude use.

High Altitude Kit Installation Instructions

1. Turn off the engine.
2. Close the fuel valve.
3. Place a bowl under the fuel cup to catch any spilled fuel.
4. Unthread the bolt holding the fuel cup.

CAUTION! Carburetor bowl may have gas in it which will leak upon removing the bolt.

5. Remove the bolt, bolt seal, fuel cup, fuel cup seal and main jet from the body of the carburetor assembly. A carburetor screwdriver (not included) is needed to remove and install the Main Jet.

Note: The mixing tube is held in place by the main jet and might fall out when it is removed. If it falls out, replace it in the same orientation before replacing the main jet.

6. Replace the main jet with the replacement jet needed for your altitude range (part 1 or 2).

Note: The Fuel cup seal and bolt seal may be damaged during removal and should be replaced with the new ones from the kit.

7. Replace the Fuel Cup Seal (4), fuel cup, Bolt Seal (3) and bolt. Tighten in place.

CAUTION: Do not cross thread Bolt when tightening. Finger tighten first and then use a wrench to make sure the Bolt is properly threaded.

8. Wipe up any spilled fuel and allow excess to evaporate before starting engine. To prevent FIRE, do not start the engine while the smell of fuel hangs in the air.

Altitude Kit Parts List

Part	Description	Qty
1	Main Jet 3000-6000 ft.	1
2	Main Jet 6000-8000 ft.	1
3	Bolt Seal	1
4	Fuel Cup Seal	1

PREDATORTM
E N G I N E S



Read the **ENTIRE** IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

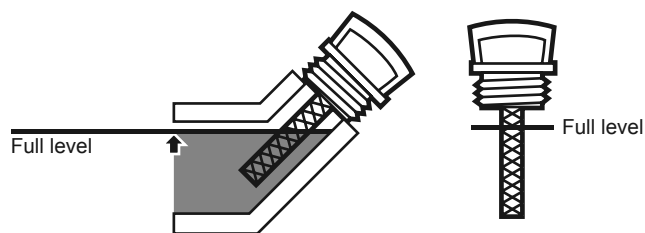
Pre-Start Checks

Inspect engine and equipment looking for damaged, loose, and missing parts before set up and starting. If any problems are found, do not use equipment until fixed properly.

Checking and Filling Engine Oil

NOTICE: Your Warranty is VOID if the engine's crankcase is not properly filled with oil before each use. Before each use, check the oil level. Do not run the engine with low or no engine oil. Running the engine with no or low engine oil WILL permanently damage the engine.

1. Make sure the engine is stopped and is level.
2. Close the Fuel Valve.
3. Clean the top of the Dipstick and the area around it. Remove the Dipstick by threading it counterclockwise, and wipe it off with a clean lint free rag.



4. Reinsert the Dipstick without threading it in and remove it to check the oil level. The oil level should be up to the full level as shown above.
5. If the oil level is at or below the low mark add the appropriate type of oil until the oil level is at the proper level. SAE 10W-30 oil is recommended for general use. (The SAE Viscosity Grade chart on page 13 in the Service section shows other viscosities to use in different average temperatures.)
6. Thread the dipstick back in clockwise.

NOTICE: Do not run the engine with too little oil. The engine will be permanently damaged.

PREDATORTM

ENGINE S

Checking and Filling Fuel



⚠ WARNING! TO PREVENT SERIOUS INJURY FROM FIRE:

Fill the fuel tank in a well-ventilated area away from ignition sources. If the engine is hot from use, shut the engine off and wait for it to cool before adding fuel. Do not smoke.

1. Clean the Fuel Cap and the area around it.
2. Unscrew and remove the Fuel Cap.
3. If needed, fill the Fuel Tank to about 1 inch under the fill neck of the Fuel Tank with 87 octane or higher unleaded gasoline that has been treated with a fuel stabilizer additive. Follow fuel stabilizer manufacturer's recommendations for use.

Note: Do not use gasoline containing more than 10% ethanol (E10). Do not use E85 ethanol.

Note: Do not use gasoline that has been stored in a metal fuel container or a dirty fuel container. It can cause particles to enter the carburetor, affecting engine performance and/or causing damage.

4. Then replace the Fuel Cap.
5. Wipe up any spilled fuel and allow excess to evaporate before starting engine. To prevent FIRE, do not start the engine while the smell of fuel hangs in the air.

Starting the Engine

Before Starting the Engine



Before starting the engine:

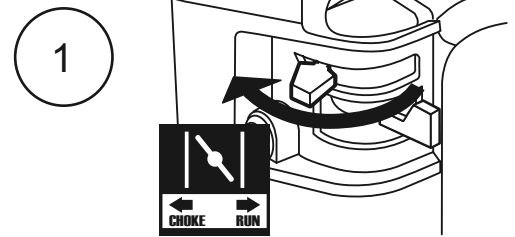
- a. Follow the Set Up Instructions in the equipment manual to prepare the equipment.
- b. Inspect the equipment and engine.
- c. Fill the engine with the proper amount and type of both fuel and oil.
- d. Read the Equipment Operation section in the equipment manual.

PREDATORTM
E N G I N E S

Manual Start

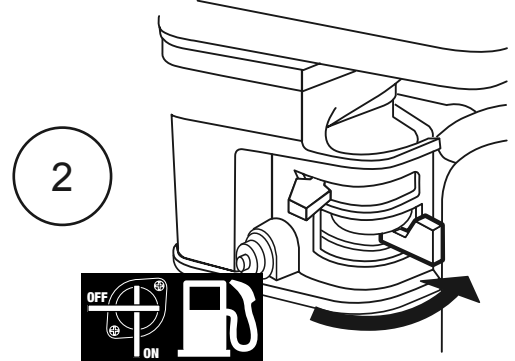
SAFETY

1. To start a cold engine, move the Choke to the CHOKE position.
To restart a warm engine, leave the Choke in the RUN position.



SETUP

2. Open the Fuel Valve.



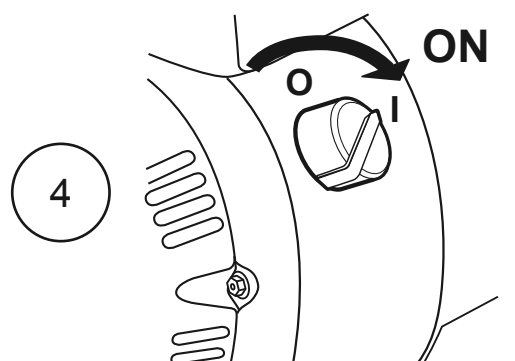
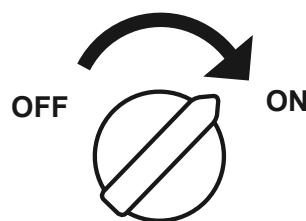
3. Slide the Throttle or Speed Control Lever to 1/3 away from the SLOW position (the "turtle").

Note: Some tools have a Speed Control Lever located elsewhere on the tool which functions the same as the Throttle. Use the Speed Control Lever in place of the Throttle when the tool is so equipped.



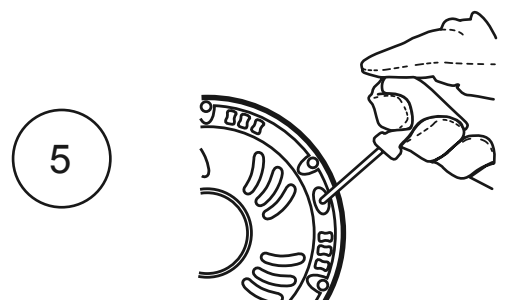
OPERATION

4. Turn the Engine Switch on.



5. Grip the Starter Handle of the Engine loosely and pull it slowly several times to allow the gasoline to flow into the Engine's carburetor. Then pull the Starter Handle gently until resistance is felt. Allow Cable to retract fully and then pull it quickly. Repeat until the engine starts.

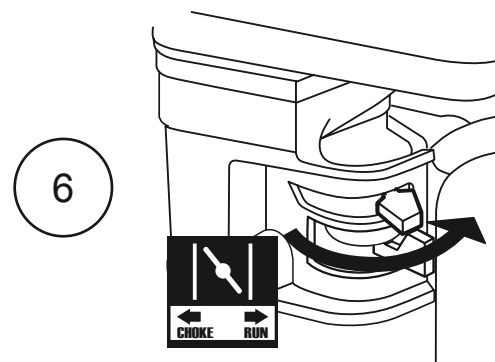
Note: Do not let the Starter Handle snap back against the engine. Hold it as it recoils so it doesn't hit the engine.



MAINTENANCE

6. Allow the Engine to run for several seconds. Then, if the Choke lever is in the CHOKE position, move the Choke Lever very slowly to its RUN position.

Note: Moving the Choke Lever too fast could stall the engine.



IMPORTANT: Allow the engine to run at no load for five minutes with no load after each start-up so that the engine can stabilize.

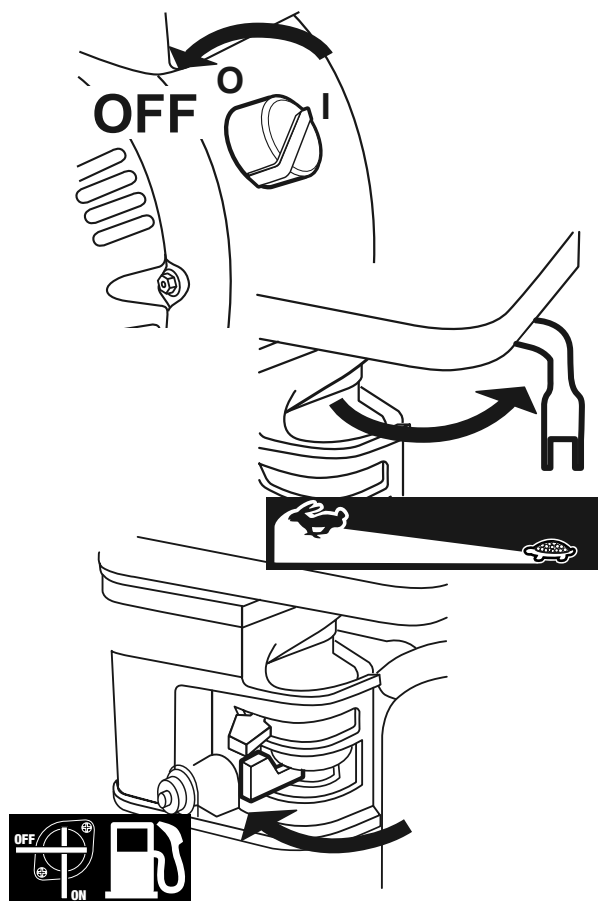
7. Adjust the Throttle as needed.
8. **Break-in Period:**
 - a. Breaking-in the engine will help to ensure proper equipment and engine operation.
 - b. The operational break-in period will last about 3 hours of use. During this period:
 - Do not apply a heavy load to the equipment.
 - Do not operate the engine at its maximum speed.
 - c. The maintenance break-in period will last about 20 hours of use. After this period:
 - Change the engine oil.

Under normal operating conditions subsequent maintenance follows the schedule explained in the MAINTENANCE AND SERVICING section.

Stopping the Engine

1. To stop the engine in an emergency, turn the Engine Switch off.
2. Under normal conditions, use the following procedure:
 - a. Slide the Throttle or Speed Control Lever to SLOW (the “turtle”).
 - b. Turn the Engine Switch off.
 - c. Close the Fuel Valve.

WARNING! The fuel valve must be closed before moving the engine to prevent fuel leakage and fire.



⚠ WARNING**TO PREVENT SERIOUS INJURY FROM ACCIDENTAL STARTING:**

Turn the Power Switch of the equipment to its "OFF" position, wait for the engine to cool, and disconnect the spark plug cap before performing any inspection, maintenance, or cleaning procedures.

TO PREVENT SERIOUS INJURY FROM EQUIPMENT FAILURE:

Do not use damaged equipment. If abnormal noise, vibration, or excess smoking occurs, have the problem corrected before further use.

Follow all service instructions in this manual. The engine may fail critically if not serviced properly.



Many maintenance procedures, including any not detailed in this manual, will need to be performed by a qualified technician for safety. If you have any doubts about your ability to safely service the equipment or engine, have a qualified technician service the equipment instead.

Cleaning, Maintenance, and Lubrication Schedule

Note: This maintenance schedule is intended solely as a general guide. If performance decreases or if equipment operates unusually, check systems immediately. The maintenance needs of each piece of equipment will differ depending on factors such as duty cycle, temperature, air quality, fuel quality, and other factors.

Note: The following procedures are in addition to the regular checks and maintenance explained as part of the regular operation of the engine and equipment.

Procedure	Before Each Use	Monthly or every 20 hr. of use	Every 3 mo. or 50 hr. of use	Every 6 mo. or 100 hr. of use	Yearly or every 300 hr. of use	Every 2 Years
Brush off outside of engine	✓	✓	✓	✓	✓	✓
Check engine oil level	✓	✓	✓	✓	✓	✓
Check air cleaner	✓		✓	✓	✓	✓
Check deposit cup	✓			✓	✓	✓
Change engine oil		✓		✓	✓	✓
Clean/replace air cleaner			✓*	✓	✓	✓
Check and clean spark plug				✓	✓	✓
1. Check/adjust idle speed 2. Check/adjust valve clearance 3. Clean fuel tank, strainer and carburetor 4. Clean carbon build-up from combustion chamber					✓**	✓**
Replace fuel line if necessary						✓**

*Service more frequently when used in dusty areas.

**These items should be serviced by a qualified technician.

PREDATORTM

ENGINE S

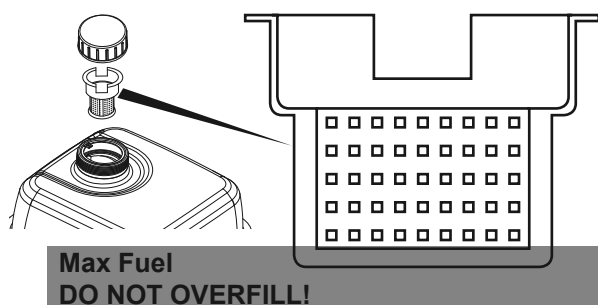
Checking and Filling Fuel



⚠ WARNING! TO PREVENT SERIOUS INJURY FROM FIRE:

Fill the fuel tank in a well-ventilated area away from ignition sources. If the engine is hot from use, shut the engine off and wait for it to cool before adding fuel. Do not smoke.

1. Clean the Fuel Cap and the area around it.
2. Unscrew and remove the Fuel Cap.
3. If needed, fill the Fuel Tank to about 1 inch under the fill neck of the Fuel Tank with 87 octane or higher unleaded gasoline that has been treated with a fuel stabilizer additive. Follow fuel stabilizer manufacturer's recommendations for use. Fill to the bottom of the fuel strainer ONLY, see below.



⚠ WARNING! TO PREVENT FUEL LEAKAGE AND FIRE HAZARD, do not fill fuel above the bottom of fuel strainer.

Note: Do not use gasoline containing more than 10% ethanol (E10). Do not use E85 ethanol.

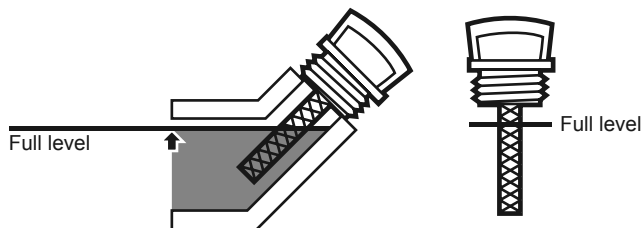
Note: Do not use gasoline that has been stored in a metal fuel container or a dirty fuel container. It can cause particles to enter the carburetor, affecting engine performance and/or causing damage.

4. Then replace the Fuel Cap.
5. Wipe up any spilled fuel and allow excess to evaporate before starting engine. To prevent FIRE, do not start the engine while the smell of fuel hangs in the air.

Engine Oil Change

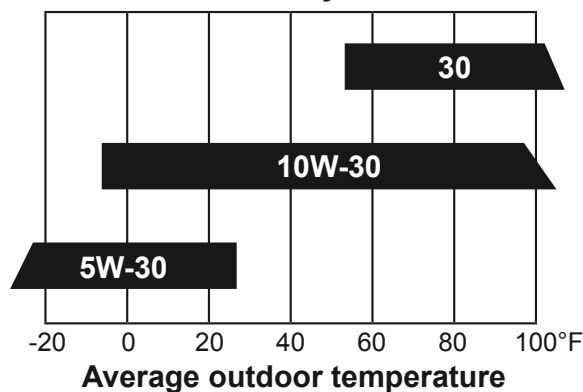
⚠ CAUTION! Oil is very hot during operation and can cause burns. Wait for engine to cool before changing oil.

1. Make sure the engine is stopped and is level.
2. Close the Fuel Valve.
3. Place a drain pan (not included) underneath the crankcase's drain plug.
4. Remove the drain plug and, if possible, tilt the crankcase slightly to help drain the oil out. Recycle used oil.
5. Replace the drain plug and tighten it.
6. Clean the top of the Dipstick and the area around it. Remove the Dipstick by threading it counterclockwise, and wipe it off with a clean lint free rag.



7. Add the appropriate type of oil until the oil level is at the full level. SAE 10W-30 oil is recommended for general use. The SAE Viscosity Grade chart shows other viscosities to use in different average temperatures.

SAE Viscosity Grades



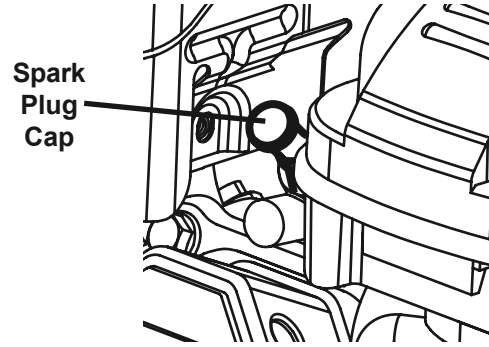
8. Thread the dipstick back in clockwise.

CAUTION! Do not run the engine with too little oil. The engine will be permanently damaged.

Air Filter Element Maintenance

1. Remove the air filter cover and the air filter elements and check for dirt. Clean as described below.
2. **Cleaning:**
 - For “paper” filter elements:
To prevent injury from dust and debris, wear ANSI-approved safety goggles, NIOSH-approved dust mask/respirator, and heavy-duty work gloves. In a well-ventilated area away from bystanders, use pressurized air to blow dust out of the air filter.
 - For foam filter elements:
Wash the element in warm water and mild detergent several times. Rinse. Squeeze out excess water and allow it to dry completely. Soak the filter in lightweight oil briefly, then squeeze out the excess oil.
3. Install the cleaned filter. Secure the Air Cleaner Cover before use.

Spark Plug Maintenance



1. Disconnect spark plug cap from end of plug. Clean out debris from around spark plug.
2. Using a spark plug wrench, remove the spark plug.
3. Inspect the spark plug:
If the electrode is oily, clean it using a clean, dry rag. If the electrode has deposits on it, polish it using emery paper. If the white insulator is cracked or chipped, the spark plug needs to be replaced.

Recommended Spark Plugs	
NGK®	BP-6ES
NHSP® / TORCH®	F6TC

NOTICE: Using an incorrect spark plug may damage the engine.

4. When installing a new spark plug, adjust the plug's gap to the specification on the Technical Specifications chart. Do not pry against the electrode, the spark plug can be damaged.
5. Install the new spark plug or the cleaned spark plug into the engine. Gasket-style: Finger-tighten until the gasket contacts the cylinder head, then tighten about 1/2-2/3 turn more.
Non-gasket-style: Finger-tighten until the plug contacts the head, then tighten about 1/16 turn more.

NOTICE: Tighten the spark plug properly. If loose, the spark plug will cause the engine to overheat.

If overtightened, the threads in the engine block will be damaged.

6. Apply dielectric spark plug boot protector (not included) to the end of the spark plug and reattach the wire securely.

Storage

When the equipment is to remain idle for longer than 20 days, prepare the Engine for storage as follows:

1. **CLEANING:**

Wait for Engine to cool, then clean Engine with dry cloth. **NOTICE:** Do not clean using water. The water will gradually enter the Engine and cause rust damage. Apply a thin coat of rust preventive oil to all metal parts.

2. **FUEL:**

To protect the fuel tank during storage, fill the tank with gasoline that has been treated with a fuel stabilizer additive. Follow fuel stabilizer manufacturer's recommendations for use. Refer to Checking and Filling Fuel on page "Checking and Filling Fuel" on page 9.



⚠ WARNING! TO PREVENT SERIOUS INJURY FROM FIRE:

Fill tank in a well-ventilated area away from ignition sources. If the engine is hot from use, shut the engine off and wait for it to cool before adding fuel. Do not smoke.

3. **LUBRICATION:**

- Change engine oil.
- Clean out area around spark plug.
Remove spark plug and pour one tablespoon of engine oil into cylinder through spark plug hole.

- Replace spark plug, but leave spark plug cap disconnected.
- Pull Starter Handle to distribute oil in cylinder. Stop after one or two revolutions when you feel the piston start the compression stroke (when you start to feel resistance).

4. **STORAGE AREA:**

Cover and store in a dry, level, well-ventilated area out of reach of children. Storage area should also be away from ignition sources, such as water heaters, clothes dryers, and furnaces.

NOTICE: During extended storage periods the Engine must be started every 3 months and allowed to run for 15–20 minutes or the Warranty is VOID.

5. **AFTER STORAGE:**

Before starting the Engine during or after storage, keep in mind that untreated gasoline will deteriorate quickly. Drain the fuel tank and change to fresh fuel if untreated gasoline has been sitting for a month, if treated gasoline has been sitting beyond the fuel stabilizer's recommended time period, or if the Engine does not start.

PREDATORTM

ENGINE S

Troubleshooting

SAFETY

SETUP

OPERATION

MAINTENANCE

Problem	Possible Causes	Probable Solutions
Engine will not start	FUEL RELATED: <ol style="list-style-type: none"> 1. No fuel in tank or fuel valve closed. 2. Choke not in CHOKE position, cold engine. 3. Gasoline with more than 10% ethanol used. (E15, E20, E85, etc.) 4. Low quality or deteriorated, old gasoline. 5. Carburetor not primed. 6. Dirty fuel passageways. 7. Carburetor needle stuck. Fuel can be smelled in the air. 8. Too much fuel in chamber. This can be caused by the carburetor needle sticking. 9. Clogged Fuel Filter. 	FUEL RELATED: <ol style="list-style-type: none"> 1. Fill fuel tank with fresh 87+ octane stabilizer-treated unleaded gasoline and open fuel valve. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 2. Move Choke to CHOKE position. 3. Clean out ethanol rich gasoline from fuel system. Replace components damaged by ethanol. Use fresh 87+ octane stabilizer-treated unleaded gasoline only. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 4. Use fresh 87+ octane stabilizer-treated unleaded gasoline. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 5. Pull on Starter Handle to prime. 6. Clean out passageways using fuel additive. Heavy deposits may require further cleaning. 7. Gently tap side of carburetor float chamber with screwdriver handle. 8. Turn Choke to RUN position. Remove spark plug and pull the start handle several times to air out the chamber. Reinstall spark plug and set Choke to CHOKE position. 9. Replace Fuel Filter.
	IGNITION (SPARK) RELATED: <ol style="list-style-type: none"> 1. Spark plug cap not connected securely. 2. Spark plug electrode wet or dirty. 3. Incorrect spark plug gap. 4. Spark plug cap broken. 5. Circuit breaker tripped (electric start models only). 6. Incorrect spark timing or faulty ignition system. 	IGNITION (SPARK) RELATED: <ol style="list-style-type: none"> 1. Connect spark plug cap properly. 2. Clean spark plug. 3. Correct spark plug gap. 4. Replace spark plug cap. 5. Reset circuit breaker. Check wiring and starter motor if breaker continues to trip. 6. Have qualified technician diagnose/repair ignition system.
	COMPRESSION RELATED: <ol style="list-style-type: none"> 1. Cylinder not lubricated. Problem after long storage periods. 2. Loose or broken spark plug. (Hissing noise will occur when trying to start.) 3. Loose cylinder head or damaged head gasket. (Hissing noise will occur when trying to start.) 4. Engine valves or tappets mis-adjusted or stuck. 	COMPRESSION RELATED: <ol style="list-style-type: none"> 1. Pour tablespoon of oil into spark plug hole. Crank engine a few times and try to start again. 2. Tighten spark plug. If that does not work, replace spark plug. If problem persists, may have head gasket problem, see #3. 3. Tighten head. If that does not remedy problem, replace head gasket. 4. Have qualified technician diagnose/repair ignition system.



Follow all safety precautions whenever diagnosing or servicing the equipment or engine.

Problem	Possible Causes	Probable Solutions
Engine misfires	<ol style="list-style-type: none"> 1. Spark plug cap loose. 2. Incorrect spark plug gap or damaged spark plug. 3. Defective spark plug cap. 4. Old or low quality gasoline. 5. Incorrect compression. 	<ol style="list-style-type: none"> 1. Check wire connections. 2. Re-gap or replace spark plug. 3. Replace spark plug cap. 4. Use only fresh 87+ octane stabilizer-treated unleaded gasoline. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 5. Diagnose and repair compression. (Use Engine will not start: COMPRESSION RELATED section.)
Engine stops suddenly	<ol style="list-style-type: none"> 1. Low oil shutdown. 2. Fuel tank empty or full of impure or low quality gasoline. 3. Defective fuel tank cap creating vacuum, preventing proper fuel flow. 4. Faulty magneto. 5. Disconnected or improperly connected spark plug cap. 	<ol style="list-style-type: none"> 1. Fill engine oil to proper level. Check engine oil before EVERY use. 2. Fill fuel tank with fresh 87+ octane stabilizer-treated unleaded gasoline. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 3. Test/replace fuel tank cap. 4. Have qualified technician service magneto. 5. Secure spark plug cap.
Engine stops when under heavy load	<ol style="list-style-type: none"> 1. Dirty air filter 2. Engine running cold. 	<ol style="list-style-type: none"> 1. Clean or replace element. 2. Allow engine to warm up prior to operating equipment.
Engine knocks	<ol style="list-style-type: none"> 1. Old or low quality gasoline. 2. Engine overloaded. 3. Incorrect spark timing, deposit buildup, worn engine, or other mechanical problems. 	<ol style="list-style-type: none"> 1. Fill fuel tank with fresh 87+ octane stabilizer-treated unleaded gasoline. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 2. Do not exceed equipment's load rating. 3. Have qualified technician diagnose and service engine.
Engine backfires	<ol style="list-style-type: none"> 1. Impure or low quality gasoline. 2. Engine too cold. 3. Intake valve stuck or overheated engine. 4. Incorrect timing. 	<ol style="list-style-type: none"> 1. Fill fuel tank with fresh 87+ octane stabilizer-treated unleaded gasoline. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 2. Use cold weather fuel and oil additives to prevent backfiring. 3. Have qualified technician diagnose and service engine. 4. Check engine timing.



Follow all safety precautions whenever diagnosing or servicing the equipment or engine.

Limited 90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Emission Control System Warranty

California and United States Emission Control Defects Warranty Statement

The California Air Resources Board (herein CARB), the United States Environmental Protection Agency (herein EPA), and Harbor Freight Tools (herein HFT) are pleased to explain the emission control system warranty on your 2014-2015 Small Off-Road Engine (herein engine). In California, the engine must be designed, built and equipped to meet the State's stringent anti-smog standards. Elsewhere within the United States, new off-road, spark-ignition engines certified for model year 2014-2015, must meet similar standards set forth by the EPA. HFT must warrant the emission control system on your engine for the periods of time described below, provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the carburetor or fuel-injection system, and the ignition system. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, HFT will repair your engine at no cost to you including diagnosis, parts and labor.

Manufacturer's Warranty Coverage

The 2014-2015 engines are warranted for two (2) years. If any emission-related part on your engine is defective, the part will be repaired or replaced by HFT.

Harbor Freight Tools Emission Control Defects Warranty Coverage

Engines are warranted for a period of two (2) years relative to emission control parts defects, subject to the provisions set forth below. If any emission related part on your engine is defective, the part will be repaired or replaced by HFT.

Owner's Warranty Responsibilities

- As the engine owner, you are responsible for the performance of the required maintenance listed in your Owner's Manual. HFT recommends that you retain all receipts covering maintenance on your engine, but HFT cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.
- As the engine owner, you should, however, be aware that HFT may deny you warranty coverage if your engine or a part has failed due to abuse, neglect, improper maintenance, or unapproved modifications.
- You are responsible for shipping your engine to a HFT warranty station as soon as a problem exists. Contact the HFT Customer Service department at the number below to make shipping arrangements. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact the Harbor Freight Tools Customer Service Department at 1-888-866-5797.

Harbor Freight Tools Emission Control Defects Warranty Provisions

1. Length of Coverage

HFT warrants to a first retail purchaser and each subsequent purchaser that the engine is free from defects in materials and workmanship that cause the failure of warranted parts for a period of two (2) years after the date of delivery to the first retail purchaser.

2. No Charge Repair or Replacement

Repair or replacement of any warranted part will be performed at no charge to the owner if the work is performed through a warranty station authorized by HFT. For emissions warranty service, contact the HFT Customer Service Department at 1-888-866-5797.

3. Consequential Damages Coverage

Coverage under this warranty shall also extend to the failure of any engine components caused by the failure of any warranted part while it is still covered under this warranty.

4. Coverage Exclusions

Warranty claims shall be filed in accordance with the provisions of the HFT warranty policy explained in the box at the top of the previous page. HFT shall not be liable for any loss of use of the engine, for any alternative usage, for any damage to goods, loss of time, or inconvenience. Warranty coverage shall also be excluded for any part which fails, malfunctions, or is damaged due to failure to follow the maintenance and operating instructions set forth in the Owner's Manual including, but not limited to:

- a) Use of parts which are not authorized by HFT
- b) Improper installation, adjustment or repair of the engine or of any warranted part unless performed by an authorized warranty center
- c) Failure to follow recommendations on fuel use contained in the Owner's Manual
- d) Improper or inadequate maintenance of any warranted parts
- e) Repairs performed outside of the authorized warranty service dealers
- f) Alterations by changing, adding to or removing parts from the engine.

5. Service and Maintenance

Component parts which are not scheduled for replacement as required maintenance or are scheduled only for regular inspection to the effect of "repair or replace as necessary" are warranted for the warranty period. Any warranted part which is scheduled for replacement as required maintenance is warranted for the period of time up to the first scheduled replacement point for that part. Any replacement part, provided it is equivalent in durability and performance, may be used in performance of maintenance or repairs. The owner is responsible for commissioning a qualified technician/mechanic to perform all required maintenance, as outlined in the Inspection, Cleaning, and Maintenance section in this manual.

6. Warranted Parts

1) Fuel Metering System

- i) Carburetor and its internal parts.
- ii) Air/fuel ratio feedback and control system.
- iii) Cold start enrichment system.
- iv) Fuel Tank.

2) Air Induction System

- i) Controlled hot air intake system.
- ii) Intake manifold.
- iii) Air filter.

3) Ignition System

- i) Spark Plugs.
- ii) Magneto or electronic ignition system.
- iii) Spark advance/retard system.

4) Exhaust Gas Recirculation (EGR) System (if so equipped)

- i) EGR valve body, and carburetor spacer.
- ii) EGR rate feedback and control system.

5) Air Injection System

- i) Air pump or pulse valve.
- ii) Valves affecting distribution of flow.
- iii) Distribution manifold.

6) Catalyst or Thermal Reactor System (if so equipped)

- i) Catalytic converter.
- ii) Thermal reactor.
- iii) Exhaust manifold.

7) Particulate Controls

Traps, filters, precipitators, and any other device used to capture particulate emissions.

PLEASE READ THE FOLLOWING CAREFULLY

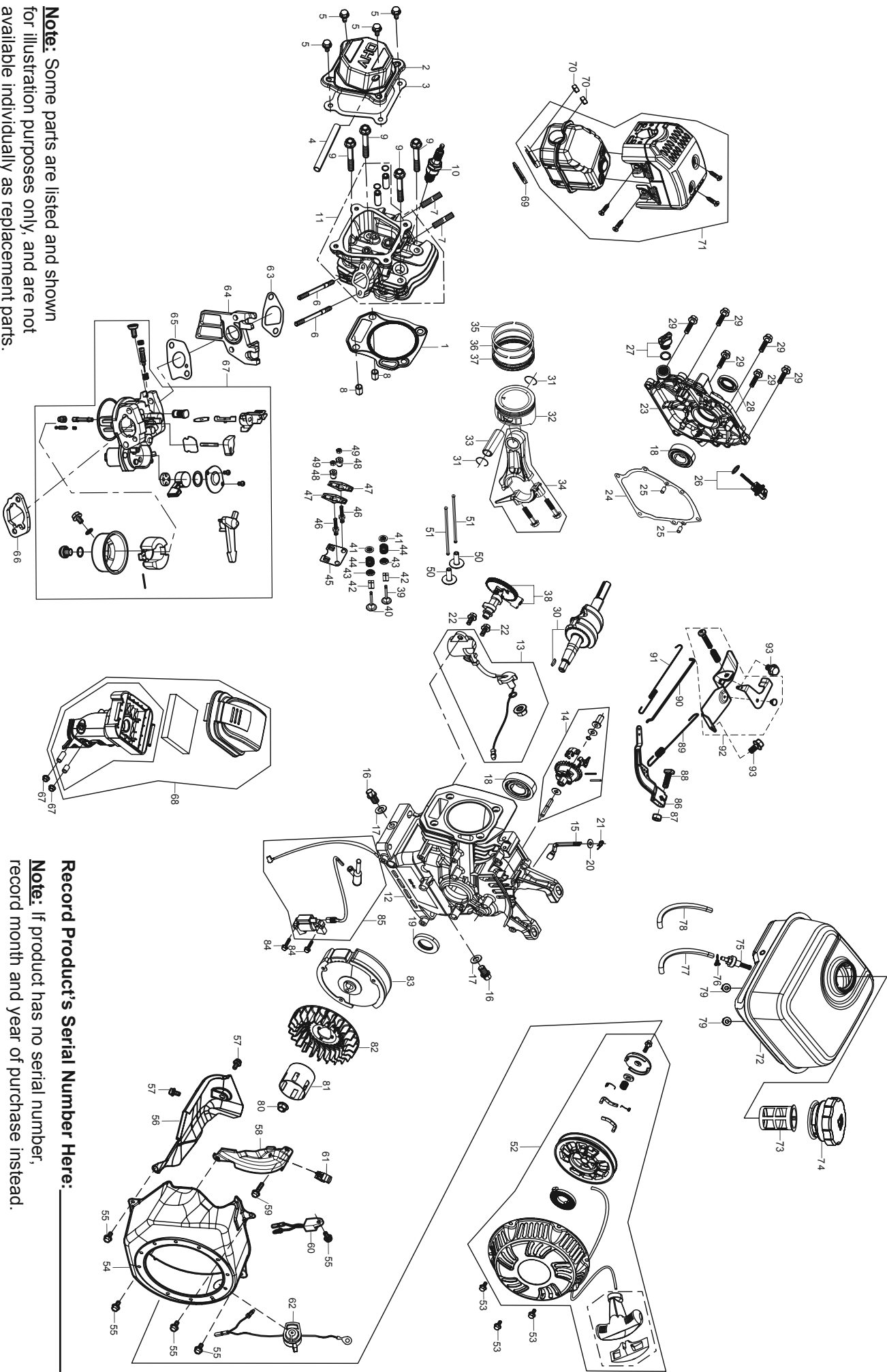
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Parts List

Part	Description	Qty
1	Gasket, Cylinder Head	1
2	Cover Subassembly, Cylinder Head	1
3	Gasket, Cylinder Head Cover	1
4	Tube, Breather	1
5	Bolt	4
6	Stud	2
7	Stud	2
8	Pin	2
9	Bolt, Cylinder Head	4
10	Plug, Spark	1
11	Head Subassembly, Cylinder	1
12	Crankcase Subassembly	1
13	Sensor, Engine Oil	1
14	Gear Asm, Governor	1
15	Arm, Governor	1
16	Bolt, Drain Plug	2
17	Washer, Flat	2
18	Bearing, Deep Groove Ball	2
19	Seal, Oil	1
20	Washer, Flat	1
21	Cotter	1
22	Bolt	2
23	Cover, Crankcase	1
24	Gasket, Crankcase	1
25	Pin	2
26	Dipstick Subassembly, Oil	1
27	Plug Subassembly, Engine Oil	1
28	Seal, Oil	1
29	Bolt	6
30	Crankshaft Asm.	1
31	Clip, Piston Pin	2
32	Piston	1
33	Pin, Piston	1
34	Rod, Connecting	1
35	Primary Ring	1
36	Secondary Ring	1
37	Ring Set, Oil	1
38	Camshaft Asm.	1
39	Valve, Exhaust	1
40	Valve, Intake	1
41	Seat, Valve Spring	2
42	Clamp, Valve Lock	4
43	Guide, Seal	2
44	Spring, Valve	2
45	Plate Subassembly, Lifter Stopper	1
46	Bolt, Rocker Shaft	2
47	Rocker, Valve	2

Part	Description	Qty
48	Nut, Valve Adjusting	2
49	Nut, Valve Lock	2
50	Tappet, Valve	2
51	Lifter, Valve	2
52	Starter Asm, Recoil	1
53	Bolt	1
54	Shroud	1
55	Bolt	4
56	Shroud, Cylinder Body	1
57	Bolt	2
58	Shield, Lower	1
59	Bolt	1
60	Protector, Oil	1
61	Collar	1
62	Switch Subassembly, Stop Engine	1
63	Gasket, Carburetor Insulator	1
64	Plate, Carburetor Insulator	1
65	Gasket, Carburetor	1
66	Gasket, Air Cleaner	1
67	Nut	2
68	Cleaner, Air	1
69	Gasket, Exhaust Outlet	1
70	Nut	2
71	Muffler Asm.	1
72	Tank, Fuel	1
73	Strainer, Fuel	1
74	Cover, Fuel Tank	1
75	Outlet Subassembly, Fuel Tank Oil	1
76	Collar	1
77	Tube, Fuel	1
78	Jacket, Rubber	1
79	Nut	2
80	Nut, Flywheel	1
81	Pulley, Starter	1
82	Impeller	1
83	Flywheel Subassembly	1
84	Bolt	2
85	Coil, Ignition	1
86	Support Subassembly, Governor	1
87	Nut	1
88	Bolt, Governor Support	1
89	Spring, Governor	1
90	Rod, Governor	1
91	Spring, Throttle Valve Returning	1
92	Control Asm, Throttle	1
93	Bolt	2

Assembly Diagram



Record Product's Serial Number Here: _____

Note: If product has no serial number, record month and year of purchase instead.

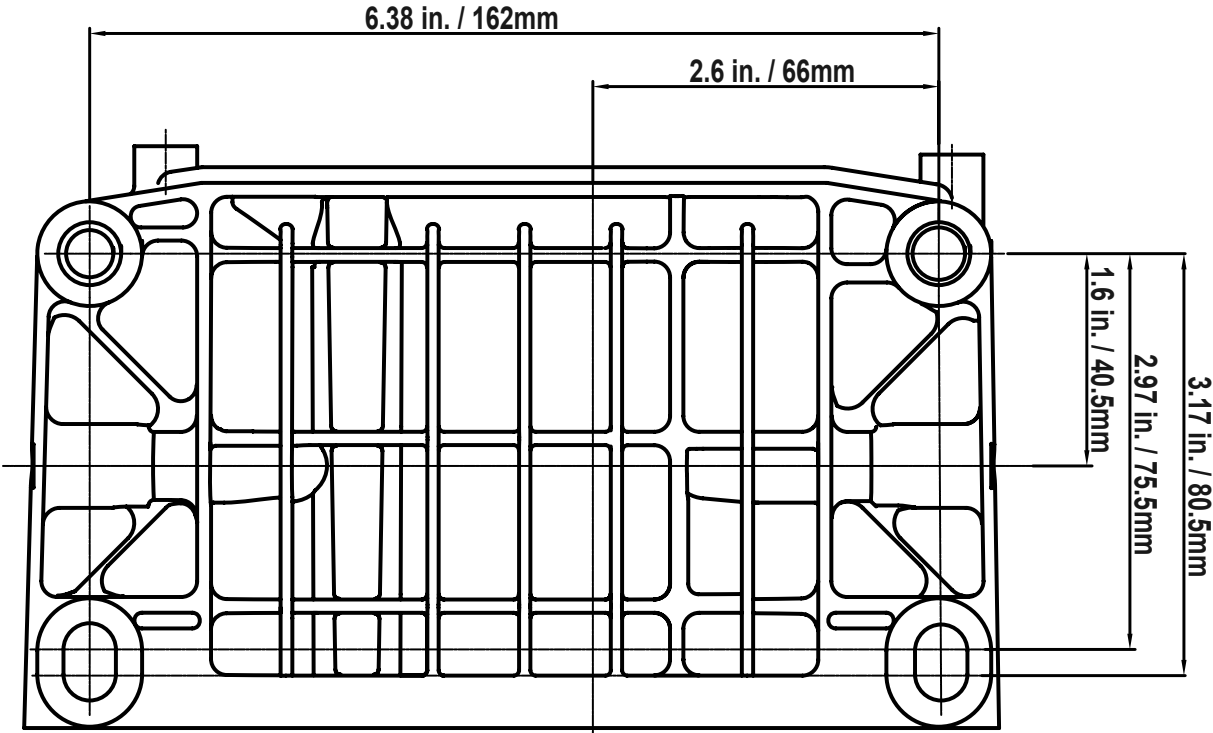
Mounting Hole Diagram

SAFETY

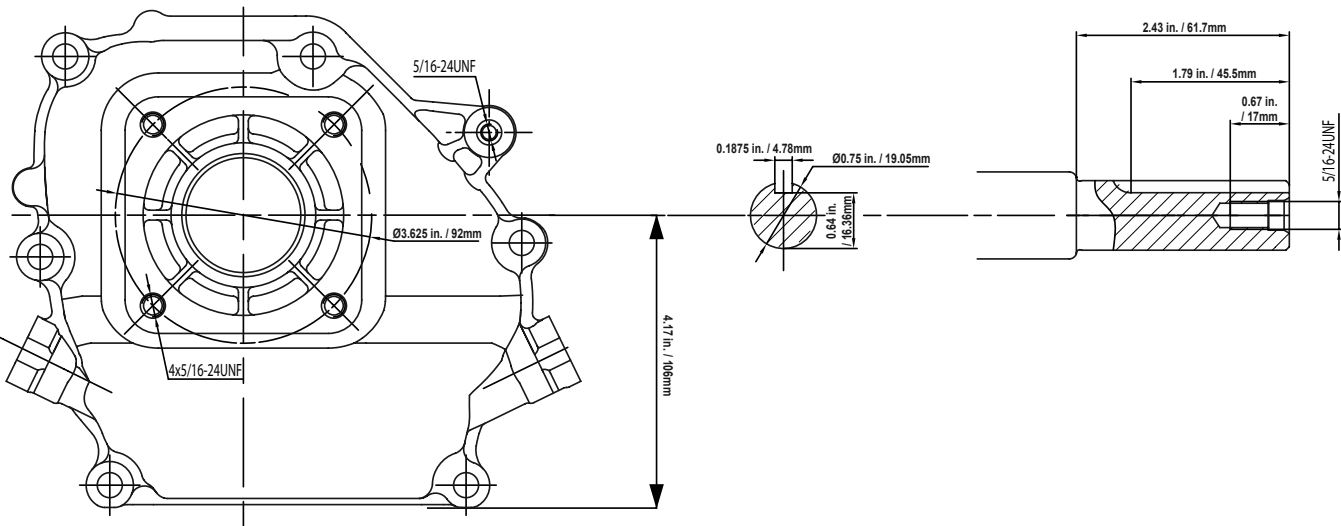
SETUP

OPERATION

MAINTENANCE



Power Take-Off Diagram



Note: Not to scale.

SAFETY

SETUP

OPERATION

MAINTENANCE

PREDATORTM **E N G I N E S**

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